

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113

Combination No. : 0 402 796 818

Injection pump
Pump designation : PES6P120A720RS7356
EP type number : 0 412 726 919

Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 66463

Customer-spec. information
Customer : DEERE
Motor : 6081 AFD01
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

A01

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende
and maximum rack
travel : 15.00

Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75

Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

| | | |
|-------------------------------|---|---------|
| Rated speed rpm | : | 450 |
| Uact V | : | 1.740 |
| Tolerance Volt | : | ± 0.060 |
| Check tolerance | | |
| Volt | : | ± 0.060 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 26.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 3.0 |
| Speed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : | 6.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | 10.0 |

STARTING FUEL DELIVERY

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 100 |
| Uact V | : | 4.550 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 120.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 20.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 25.0 |

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 057

Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017

Governor
Governor design. : RSV475...1250A0C936R
Governor no. : F 002 A20 241

Cust. part No. : 3930145

Customer-spec. information
Customer : CDC
Motor : 4BNA3.9
Power KW : 59.7

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

A04

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

| | |
|--|---------|
| Del. quantity cm ³ /1000 strokes | : 92.0 |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| <hr/> | |
| Check tolerance cm ³ /1000S. | : ± 3.0 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : 3.5 |
| <hr/> | |
| Check tolerance cm ³ /1000S. | : 6.0 |
| <hr/> | |

| | |
|--|----------|
| Rated speed rpm | : 475 |
| <hr/> | |
| Rack travel in mm | : 4.60 |
| Tolerance mm | : ± 0.10 |
| Del. quantity cm ³ /1000 strokes | : 13.5 |
| Tolerance cm ³ /1000 strokes | : ± 2.0 |
| Check tolerance cm ³ /1000S. | : ± 4.5 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : 3.5 |
| Check tolerance cm ³ /1000S. | : 5.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|----------------------------------|----------|
| control lever position degree | : - 3 |
| Rated speed rpm | : 800 |
| <hr/> | |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : ± 0.20 |
| <hr/> | |
| governor spring pre-tension | |
| click setting x | : 3.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-----------------|--------|
| Rated speed rpm | : 1250 |
|-----------------|--------|

| | |
|--|---------|
| Aneroid pressure hPa | : - |
| Del. quantity cm ³ /1000 strokes | : 92.0 |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 3.0 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : 3.5 |
| Check tolerance cm ³ /1000S. | : 6.0 |

CONTROL LEVER

| | |
|----------------------------------|---------|
| control lever position degree | : 91.0 |
| tolerance degree | : ± 4.0 |

RATED SPEED

| | |
|-----------------|--------|
| rack travel mm | : 9.20 |
| Rated speed rpm | : 1320 |
| Tolerance 1/min | : ± 5 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1380 |

| | |
|-----------------|----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : ± 0.55 |
| Rated speed rpm | : 1450 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1385 |
| Tolerance 1/min | : ± 15 |

LOW IDLE

| | |
|----------------------------------|---------|
| control lever position degree | : 70.0 |
| tolerance degree | : ± 4.0 |

| | |
|----------------------------------|---------|
| Control lever difference Grad | : 20.0 |
| tolerance degree | : ± 6.0 |

Setting point w/out bumper spring

| | |
|-----------------|----------|
| Rated speed rpm | : 475 |
| rack travel mm | : 4.10 |
| Tolerance mm | : ± 0.10 |

| | |
|-----------------|-------|
| Rated speed rpm | : 100 |
|-----------------|-------|

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.20
Tolerance mm : \pm 0.05

Rated speed rpm : 600

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 401 846 849

Injection pump

Pump designation : PE6P120A32ORS3196

EP type number : 0 411 826 763

Governor

Governer design. : RQV200...1100PA729
: -1

Governer no. : 0 421 813 470

Cust. part No. :

Customer-spec. information

Customer : SCANIA

Motor : DS9 06

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order

: 1- 5- 3- 6- 2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm : 225

Rack travel in mm : 5.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1120
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : ± 4.0

control lever
 position degree : 114.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40
 Rated speed rpm : 1145
 Tolerance 1/min : ± 5
 Check
 speed 1/min : ± 15

rack travel mm : 4.00
 Rated speed rpm : 1265
 Tolerance 1/min : ± 15
 Check
 speed 1/min : ± 20

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : ± 4.0

control lever
 position degree : 9.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.20

Testing:

Rated speed rpm : 225
 rack travel mm : 5.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 330
 Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 10.45
 Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 149.0
 Tolerance
 cm³/1000 strokes : ± 4.0
 Check tolerance
 cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.50
 Tolerance mm : ± 0.50

Del. quantity
cm³/1000 strokes : 355.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 401 846 950

Injection pump

Pump designation : PE6P110A720RS3289

EP type number : 0 411 816 781

Governor

Governer design. : RQV200...1100PA555

: -5

Governer no. : 0 421 813 943

Cust. part No. : 1333234

Customer-spec. information

Customer : SCANIA

Motor : DS11 63A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.35

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 325

Rack travel in mm : 6.60

Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 22.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1130

 Rack travel in mm : 16.50
 Tolerance mm : +- 1.30

CONTROL LEVER

control lever
 position degree : 62.0
 tolerance degree : +- 4.0

control lever
 position degree : 116.0
 tolerance degree : +- 4.0

RATED SPEED
 rack travel mm : 11.30
 Rated speed rpm : 1145
 Tolerance 1/min : +- 5
 Check
 speed 1/min : +- 10

rack travel mm : 4.00
 Rated speed rpm : 1280
 Tolerance 1/min : +- 15
 Check
 speed 1/min : +- 20

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : +- 4.0

control lever
 position degree : 16.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 8.80

Testing:

Rated speed rpm : 325
 rack travel mm : 6.60
 Tolerance mm : +- 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.35
 Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.35
 Tolerance mm : +- 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 10.00
 Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
 rack travel mm : 10.80
 Tolerance mm : +- 0.15

Pressure hPa : 200

rack travel mm : 11.75
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 401 846 986

Injection pump

Pump designation : PE6P110A720RS3289-1

EP type number : 0 411 816 795

Governor

Governor design. : RQ900PA1153

Governor no. : 0 421 801 724

Cust. part No. : 1363597

Customer spec. information

Customer : SCANIA

Motor : DS1193A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holder assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : +- 1.5

A13

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 3.35

Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order

: 1- 5- 3- 6- 2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no.

: 1

BASIC SETTING

Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 856
 guide sleeve
 travel mm : 0.74
 Tolerance mm : \pm 0.10

Rated speed rpm : 630
 guide sleeve
 travel mm : -7.07
 Tolerance mm : \pm 0.10

Rated speed rpm : 1050
 guide sleeve
 travel mm : 16.80
 Tolerance mm : \pm 0.10

Rated speed rpm : 989
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.10

Rated speed rpm : 1050
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

CONTROL LEVER

control lever
 position degree : 22.0
 tolerance degree : \pm 4.0

control lever
 position degree : 84.0
 tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
 rack travel mm : 11.30

Rated speed rpm : 946
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 901
 rack travel mm : 11.30

Rated speed rpm : 947
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 902
 rack travel mm : 11.30

Rated speed rpm : 948
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 903
 rack travel mm : 11.30

Rated speed rpm : 949
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 904
 rack travel mm : 11.30

Rated speed rpm : 950
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50

Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 11.30

Rated speed rpm : 951
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1000

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 10.80
Tolerance mm : +- 0.15

Pressure hPa : 200
rack travel mm : 11.75
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm3/1000 strokes : 265.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000S. : +- 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 401 846 987

Injection pump
Pump designation : PE6P110A720RS3289-1
EP type number : 0 411 816 795

Governor
Governor design. : RQ750PA1153-1
Governor no. : 0 421 801 725

Cust. part No. : 1363596

Customer-spec. information
Customer : SCANIA
Motor : DS1193A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 6.81
Tolerance mm : \pm 0.10

Rated speed rpm : 520
guide sleeve
travel mm : -5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 17.21
Tolerance mm : \pm 0.10

Rated speed rpm : 793
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 36.0
tolerance degree : \pm 4.0

control lever
position degree : 98.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.30

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 11.30

Rated speed rpm : 789
Tolerance 1/min : \pm 4

rack travel mm : 4.00
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 752
 rack travel mm : 11.30

Rated speed rpm : 790
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 753
 rack travel mm : 11.30

Rated speed rpm : 791
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 754
 rack travel mm : 11.30

Rated speed rpm : 792
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 755
 rack travel mm : 11.30

Rated speed rpm : 793
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.35
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.35
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 10.00
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
 rack travel mm : 11.75
 Tolerance mm : \pm 0.05

Pressure hPa : 140
 rack travel mm : 10.80
 Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 114.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.50
 Tolerance mm : \pm 0.50
 Del. quantity
 cm³/1000 strokes : 265.0
 Tolerance
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97

Test oil : ISO 4113

Combination No. : 0 401 849 759

Injection pump

Pump designation : PE10P120A520/4LS3866

EP type number : 0 411 829 712

Governor

Governor design. : RQ300/1150PA1322

Governor no. : 0 421 801 814

Cust. part No. :

Customer-spec. information

Customer : DHI

Motor : D2840L

Power KW : 382.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 225

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.30

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8

: - 7- 6- 3- 5

: - 2

Phasing : 0-45-72-117-144

: -189-216-261-288

: -333

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.00
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 192.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 6.90
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1222
guide sleeve
travel mm : 6.37
Tolerance mm : +- 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 2.11
Tolerance mm : +- 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 413
guide sleeve
travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 1450
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 192.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Spreed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 31.0
tolerance degree : +- 4.0

control lever
position degree : 93.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 1217

Tolerance 1/min : +- 5
rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : +- 15
rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

control lever
position degree : 14.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 9.36

Testing:

Rated speed rpm : 300
rack travel mm : 6.90
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.00
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 12.00
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.00

A22

Tolerance mm : +- 0.05
Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 520
rack travel mm : 11.55
Tolerance mm : +- 0.20

Pressure hPa : 400
rack travel mm : 10.75
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 208.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 144.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271058

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 165.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.25
Rated speed rpm : 1040
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1260

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.25
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 11.25
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : +- 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 650
rack travel mm : 11.00
Tolerance mm : +- 0.05

Pressure hPa : 550
rack travel mm : 10.25
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 186.0
Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 5.0

Aneroid pressure

hPa : -
Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 152.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.40
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 36.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 5.5
Speed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748A

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271058

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power kW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : ± 1.5

A27

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

| | |
|--|---------|
| Del. quantity cm ³ /1000 strokes | : 165.0 |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| <hr/> | |
| Check tolerance cm ³ /1000S. | : ± 3.5 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance cm ³ /1000 strokes | : 4.0 |
| <hr/> | |
| Check tolerance cm ³ /1000S. | : 7.5 |
| <hr/> | |

| | |
|--|----------|
| Rated speed rpm | : 400 |
| Rack travel in mm | : 4.40 |
| Tolerance mm | : ± 0.10 |
| Del. quantity cm ³ /1000 strokes | : 36.0 |
| Tolerance cm ³ /1000 strokes | : ± 3.0 |
| Check tolerance cm ³ /1000S. | : ± 5.5 |
| Spreed | |
| Tolerance cm ³ /1000 strokes | : 4.5 |
| Check tolerance cm ³ /1000S. | : 7.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|----------------------------------|----------|
| control lever position degree | : - 3 |
| Rated speed rpm | : 800 |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : ± 0.20 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--|---------|
| Rated speed rpm | : 1000 |
| Aneroid pressure hPa | : 1300 |
| Del. quantity cm ³ /1000 strokes | : 165.0 |

| | |
|--|---------|
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 3.5 |
| Spreed | |
| Tolerance cm ³ /1000 strokes | : 4.0 |
| Check tolerance cm ³ /1000S. | : 7.5 |

CONTROL LEVER

| | |
|----------------------------------|---------|
| control lever position degree | : 108.0 |
| tolerance degree | : ± 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 10.25 |
| Rated speed rpm | : 1025 |
| Tolerance 1/min | : ± 5 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1095 |
| Tolerance 1/min | : ± 15 |

| | |
|-----------------|----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : ± 0.55 |
| Rated speed rpm | : 1260 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1100 |
| Tolerance 1/min | : ± 15 |

LOW IDLE

| | |
|----------------------------------|---------|
| control lever position degree | : 78.0 |
| tolerance degree | : ± 4.0 |

Setting point w/out bumper spring

| | |
|-----------------|----------|
| Rated speed rpm | : 400 |
| rack travel mm | : 3.90 |
| Tolerance mm | : ± 0.10 |

Testing:

| | |
|-----------------|----------|
| Rated speed rpm | : 400 |
| rack travel mm | : 4.40 |
| Tolerance mm | : ± 0.10 |

| | |
|-----------------|--------|
| rack travel mm | : 2.00 |
| Rated speed rpm | : 510 |
| Tolerance 1/min | : ± 30 |

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 650
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Pressure hPa : 550
rack travel mm : 10.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 152.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 7488

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9273570

Customer spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 179.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.40

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.5

Spreed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 179.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.30

Rated speed rpm : 925

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 975

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1125

rack travel mm : 4.00

Rated speed rpm : 995

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.90

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 11.35

Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : 650
rack travel mm : 10.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 640
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Pressure hPa : 560
rack travel mm : 10.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748C

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9275362

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

B05

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 200.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.5

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rack travel in mm : 4.40

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 5.5

Speed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 200.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.5
Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.85
Rated speed rpm : 925
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 975
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1125

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : \pm 30

TORQUE CONTROL
Rated speed rpm : 900
rack travel mm : 11.85

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.65
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 800
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 10.25
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748E

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9277045

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.40

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.5

Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 109.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.85

Rated speed rpm : 1045

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1130

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 78.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.90

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : \pm 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 535
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Pressure hPa : -
rack travel mm : 9.95
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748G

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 218.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.30

| | |
|-----------------------------------|-----------|
| Tolerance mm | : +- 0.05 |
| <hr/> | |
| Del. quantity cm3/1000 strokes | : 181.0 |
| <hr/> | |
| Tolerance cm3/1000 strokes | : +- 1.0 |
| <hr/> | |
| Check tolerance cm3/1000S. | : +- 3.5 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance cm3/1000 strokes | : 4.0 |
| <hr/> | |
| Check tolerance cm3/1000S. | : 7.5 |
| <hr/> | |

| | |
|-----------------------------------|-----------|
| Rated speed rpm | : 400 |
| Rack travel in mm | : 4.40 |
| Tolerance mm | : +- 0.10 |
| Del. quantity cm3/1000 strokes | : 30.0 |
| Tolerance cm3/1000 strokes | : +- 3.0 |
| Check tolerance cm3/1000S. | : +- 5.5 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 4.5 |
| Check tolerance cm3/1000S. | : 7.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|----------------------------------|-------|
| control lever position degree | : - 3 |
|----------------------------------|-------|

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-----------------------------------|----------|
| Rated speed rpm | : 900 |
| Aneroid pressure hPa | : 1300 |
| Del. quantity cm3/1000 strokes | : 181.0 |
| Tolerance cm3/1000 strokes | : +- 1.0 |

| | |
|-------------------------------|----------|
| Check tolerance cm3/1000S. | : +- 3.5 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 4.0 |
| Check tolerance cm3/1000S. | : 7.5 |

CONTROL LEVER

| | |
|----------------------------------|----------|
| control lever position degree | : 100.0 |
| tolerance degree | : +- 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 10.85 |
| Rated speed rpm | : 925 |
| Tolerance 1/min | : +- 5 |

| | |
|-----------------|---------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 980 |
| Tolerance 1/min | : +- 15 |

| | |
|-----------------|---------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 995 |
| Tolerance 1/min | : +- 15 |

LOW IDLE

| | |
|----------------------------------|----------|
| control lever position degree | : 75.0 |
| tolerance degree | : +- 4.0 |

Setting point w/out bumper spring

| | |
|-----------------|-----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 3.90 |
| Tolerance mm | : +- 0.10 |

Testing:

| | |
|-----------------|-----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 4.40 |
| Tolerance mm | : +- 0.10 |

TORQUE CONTROL

| | |
|-----------------|-----------|
| Rated speed rpm | : 900 |
| rack travel mm | : 12.30 |
| Tolerance mm | : +- 0.05 |

| | |
|-----------------|-----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 12.30 |
| Tolerance mm | : +- 0.10 |

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 450
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Pressure hPa : 670
rack travel mm : 10.35
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113
Combination No. : 0 402 076 748H
Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742
Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI-E A2
Power KW : 172.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 3.20
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.95

Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.90

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.5

Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 98.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.95

Rated speed rpm : 935

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 975

Tolerance 1/min : +- 15

rack travel mm : 4.00

Rated speed rpm : 985

Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 74.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.90

Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 10.95

Tolerance mm : +- 0.05

Rated speed rpm : 500

rack travel mm : 10.95

Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 10.95
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 640
rack travel mm : 10.70
Tolerance mm : \pm 0.05

Pressure hPa : 590
rack travel mm : 10.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748I

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI-E A2
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 3.20
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00

Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 183.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : 1300

Del. quantity
cm³/1000 strokes : 183.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1030

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : +- 15

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 79.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.90

Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 13.00

Tolerance mm : +- 0.05

Rated speed rpm : 500

rack travel mm : 13.00

Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 11.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 775
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Pressure hPa : 705
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 402 076 748K

Injection pump
Pump designation : PES6P110A72ORS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI-E A2
Power KW : 195.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : ± 1.5

B20

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.00

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Spreed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1025
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 11.00
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : --
rack travel mm : 10.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 630
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Pressure hPa : 590
rack travel mm : 10.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : 0 403 076 748L

Injection pump
Pump designation : PES6P110A720RS3305
: -i
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information

Customer : LIEBHERR
Motor : D 926 FI-E A2
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 5.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.00
Rated speed rpm : 940
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1000

rack travel mm : 4.00
Rated speed rpm : 1025
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 3.30
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Pressure hPa : 675
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97

Test oil : ISO 4113

Combination No. : 0 402 076 802

Injection pump

Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor

Governor design. : RSV350...1050P8A643

Governor no. : 0 421 833 555

Cust. part No. : 1385930

Customer-spec. information

Customer : SCANIA

Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order

: 1- 5- 3- 6- 2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1195

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 555
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97

Test oil : ISO 4113

Combination No. : 0 402 646 627

Injection pump
Pump designation : PE6P120A320RS7297
: -10

EP type number : 0 412 626 921

Governor
Governor design. : RQV350...1100PA795
: -12
Governor no. : 0 421 813 914

Cust. part No. : 1340653

Customer-spec. information
Customer : SCANIA
Motor : DSC 909

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 210
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

C02

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.90

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1300

Rack travel in mm : 12.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

C03

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : ± 4.0

control lever
position degree : 106.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1145

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1270

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.40

Testing:

Rated speed rpm : 250

rack travel mm : 4.90

Tolerance mm : ± 0.10

Rated speed rpm : 250

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 11.80
Tolerance mm : \pm 0.15

Pressure hPa : 670
rack travel mm : 12.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 402 646 836

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 926

Governor
Governor design. : RQV200...1000PA725
: -1
Governor no. : 0 421 813 552

Cust. part No. : 1107958

Customer-spec. information
Customer : SCANIA
Motor : DSC11 18

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

C05

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 225

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

control lever
position degree : 63.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1045

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 11.0
tolerance degree : \pm 4.0

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 225
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000

C07

Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 646 880

Injection pump

Pump designation : PE6P120A720RS7126
: -10

EP type number : 0 412 626 929

Governor

Governer design. : RQV200...1050PA725
: -5

Governer no. : 0 421 813 814

Cust. part No. : 1120969

Customer-spec. information

Customer : SCANIA

Motor : DS 11

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : +- 0.1

Test nozzle holde assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : +- 1.5

C08

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 5.05

Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 225

Rack travel in mm : 4.60
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 10.50
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1095

Tolerance 1/min : \pm 5
Check

speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : \pm 15
Check

speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 225
rack travel mm : 4.60
Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 225
Rack travel in mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 402 646 885

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 929

Governor
Governor design. : RQV350...1050PA795
: -9
Governor no. : 0 421 813 769

Cust. part No. : 1305080

Customer-spec. information
Customer : SCANIA
Motor : DS11 54,57

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0

C12

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1095

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1240

Tolerance 1/min : ± 15
Check

speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 10.00

Testing:

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm. : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.40
Tolerance mm. : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 646 904

Injection pump

Pump designation : PE6P120A720RS7126

: -10

EP type number : 0 412 626 929

Governor

Governer design. : RQV300...900PA795

: -10

Governer no. : 0 421 813 846

Cust. part No. : 1305081

Customer-spec. information

Customer : SCANIA

Motor : DS11

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15

Tolerance mm : ± 0.05

| | |
|-----------------------------------|---------|
| Del. quantity cm3/1000 strokes | : 235.0 |
| Tolerance cm3/1000 strokes | : + 1.0 |
| Check tolerance cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 6.0 |
| Check tolerance cm3/1000S. | : 9.0 |

| | |
|-----------------------------------|----------|
| Rated speed rpm | : 300 |
| Rack travel in mm | : 4.50 |
| Tolerance mm | : + 0.10 |
| Del. quantity cm3/1000 strokes | : 17.0 |
| Tolerance cm3/1000 strokes | : + 2.0 |
| Check tolerance cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 3.0 |
| Check tolerance cm3/1000S. | : 6.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|----------------------------------|----------|
| control lever position degree | : - 1 |
| Rated speed rpm | : 970 |
| Rack travel in mm | : 16.50 |
| Tolerance mm | : + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-----------------------------------|---------|
| Rated speed rpm | : 700 |
| Aneroid pressure hPa | : - |
| Del. quantity cm3/1000 strokes | : 235.0 |

| | |
|-------------------------------|---------|
| Tolerance cm3/1000 strokes | : + 1.0 |
| Check tolerance cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 6.0 |
| Check tolerance cm3/1000S. | : 9.0 |

CONTROL LEVER

| | |
|----------------------------------|---------|
| control lever position degree | : 50.0 |
| tolerance degree | : + 4.0 |

| | |
|----------------------------------|---------|
| control lever position degree | : 108.0 |
| tolerance degree | : + 4.0 |

| | |
|----------------------|---------|
| RATED SPEED | |
| rack travel mm | : 13.10 |
| Rated speed rpm | : 945 |
| Tolerance 1/min | : + 5 |
| Check speed 1/min | : + 10 |

| | |
|----------------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1045 |
| Tolerance 1/min | : + 15 |
| Check speed 1/min | : + 20 |

| | |
|-----------------|----------|
| rack travel mm | : 0.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1150 |

LOW IDLE

| | |
|----------------------------------|---------|
| control lever position degree | : 77.0 |
| tolerance degree | : + 4.0 |

| | |
|----------------------------------|---------|
| control lever position degree | : 19.0 |
| tolerance degree | : + 4.0 |

Setting point w/out bumper spring

| | |
|-----------------|-----------|
| Rated speed rpm | : 100 |
| CRT mm min. | : > 10.00 |

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : +- 0.10

Rated speed rpm : 300
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : +- 0.05

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : +- 4.0

Check tolerance
cm³/1000s. : +- 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.50
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000s. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 646 992

Injection pump
Pump designation : PE6P120A72ORS7021
EP type number : 0 412 626 869

Governor
Governor design. : RQ200/1000PA1036
Governor no. : 0 421 801 649

Cust. part No. : 1363610

Customer-spec. information
Customer : SCANIA
Motor : DSI11E01

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 250

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1054
guide sleeve

travel mm : 4.39
Tolerance mm : \pm 0.10

Rated speed rpm : 250
guide sleeve

travel mm : 1.08
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve

travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 353
guide sleeve

travel mm : 3.46
Tolerance mm : \pm 0.10

Rated speed rpm : 420
guide sleeve

travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1460
guide sleeve

travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 102

Rated speed rpm : 600

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 43.0

tolerance degree : \pm 4.0

control lever
position degree : 98.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40

Rated speed rpm : 1045

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1185

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0

tolerance degree : \pm 4.0

control lever
position degree : 11.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 250
rack travel mm : 6.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 235
rack travel mm : 13.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 268.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 14.08.97

Test oil : ISO 4113

Combination No. : 0 402 648 812M

Injection pump

Pump designation : PE8P120A320LS7801

: -10

EP type number : 0 412 628 851

Governor

Governer design. : RQ300/1050PA717

Governer no. : 0 421 801 258

Cust. part No. :

Customer-spec. information

Motor : OM442 LA

Power kW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.20

Tolerance mm : ± 0.10

| | |
|--------------------|-------|
| Del. quantity | ----- |
| cm3/1000 strokes : | 223.0 |
| Tolerance | ----- |
| cm3/1000 strokes : | + 1.0 |
| Check tolerance | ----- |
| cm3/1000S. : | + 4.0 |
| Spread | ----- |
| Tolerance | ----- |
| cm3/1000 strokes : | 7.0 |
| Check tolerance | ----- |
| cm3/1000S. : | 10.0 |

| | |
|---------------------|--------|
| Rated speed rpm : | 300 |
| Rack travel in mm : | 6.40 |
| Tolerance mm : | + 0.10 |
| Del. quantity | ----- |
| cm3/1000 strokes : | 19.0 |
| Tolerance | ----- |
| cm3/1000 strokes : | + 3.0 |
| Check tolerance | ----- |
| cm3/1000S. : | + 6.0 |
| Spread | ----- |
| Tolerance | ----- |
| cm3/1000 strokes : | 5.0 |
| Check tolerance | ----- |
| cm3/1000S. : | 8.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-------------------|--------|
| Rated speed rpm : | 1000 |
| guide sleeve | ----- |
| travel mm : | 6.25 |
| Tolerance mm : | + 0.05 |
| Rated speed rpm : | 300 |
| guide sleeve | ----- |
| travel mm : | 2.90 |
| Tolerance mm : | + 0.10 |
| Rated speed rpm : | 900 |
| guide sleeve | ----- |
| travel mm : | 6.15 |
| Tolerance mm : | + 0.05 |
| Rated speed rpm : | 600 |

| | |
|----------------|--------|
| guide sleeve | ----- |
| travel mm : | 6.05 |
| Tolerance mm : | + 0.05 |

| | |
|-------------------|--------|
| Rated speed rpm : | 1150 |
| guide sleeve | ----- |
| travel mm : | 9.45 |
| Tolerance mm : | + 0.15 |

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| control lever | ----- |
| position degree : | 109 |
| Rated speed rpm : | 600 |
| Rack travel in mm : | 20.00 |
| Tolerance mm : | + 0.80 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--------------------|-------|
| Rated speed rpm : | 1050 |
| Aneroid pressure | ----- |
| hPa : | - |
| Del. quantity | ----- |
| cm3/1000 strokes : | 223.0 |
| Tolerance | ----- |
| cm3/1000 strokes : | + 1.0 |
| Check tolerance | ----- |
| cm3/1000S. : | + 4.0 |
| Spread | ----- |
| Tolerance | ----- |
| cm3/1000 strokes : | 7.0 |
| Check tolerance | ----- |
| cm3/1000S. : | 10.0 |

CONTROL LEVER

| | |
|--------------------|-------|
| control lever | ----- |
| position degree : | 101.0 |
| tolerance degree : | + 4.0 |

RATED SPEED

| | |
|-------------------|--------|
| rack travel mm : | 14.20 |
| Rated speed rpm : | 1092 |
| Tolerance 1/min : | + 8 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1150 |
| Tolerance 1/min : | + 15 |
| rack travel mm : | 0.75 |
| Tolerance mm : | + 0.75 |
| Rated speed rpm : | 1300 |

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 399
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.20
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 15.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : 400
rack travel mm : 1.20
Tolerance mm : \pm 0.10

Pressure hPa : 600
rack travel mm : 2.90
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 233.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 648 839

Injection pump

Pump designation : PE8P120A720LS7125
: -10T

EP type number : 0 412 628 890

Governor

Governer design. : RQV200...950PA736-1

Governer no. : 0 421 813 551

Cust. part No. : 380804

Customer-spec. information

Customer : SCANIA

Motor : DSC14 03

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration damper

(RoBo diaphragm) : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 225

Rack travel in mm : 5.00

Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : + 1.30

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 95.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 44.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 125

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 225
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.40
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : + 0.15

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 402 648 867

Injection pump
Pump designation : PE8P120A720/4LS7166
: -1
EP type number : 0 412 628 897

Governor
Governor design. : RQ750PA758-7
Governor no. : 0 421 801 490

Cust. part No. : 1305125

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 253.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 253.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 30.0
tolerance degree : ± 4.0

control lever
position degree : 89.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.50

Rated speed rpm : 788
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 11.50

Rated speed rpm : 789
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 11.50

Rated speed rpm : 790
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 11.50

Rated speed rpm : 791
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 11.50

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 11.50

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.55
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Pressure hPa : 215
rack travel mm : 10.90

D01

Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 402 648 868

Injection pump
Pump designation : PE8P120A720LS7180
: -10
EP type number : 0 412 628 892

Governor
Governor design. : RQV350...1050PA795
: -8
Governor no. : 0 421 813 770

Cust. part No. : 1305130

Customer-spec. information
Customer : SCANIA
Motor : DSI 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

D02

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 350
 Rack travel in mm : 4.60
 Tolerance mm : \pm 0.30
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1325
 Rack travel in mm : 8.50
 Tolerance mm : \pm 2.50

CONTROL LEVER

control lever
 position degree : 47.0
 tolerance degree : \pm 4.0

control lever
 position degree : 102.0
 tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 12.20
 Rated speed rpm : 1095
 Tolerance 1/min : \pm 5
 Check
 speed 1/min : \pm 10

rack travel mm : 4.00
 Rated speed rpm : 1230
 Tolerance 1/min : \pm 15
 Check
 speed 1/min : \pm 20

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : \pm 4.0

control lever
 position degree : 16.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.00

Testing:

Rated speed rpm : 350
 rack travel mm : 4.60
 Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 13.25
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 900
 rack travel mm : 13.25
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.90
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 215
 rack travel mm : 10.90
 Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 648 873

Injection pump
Pump designation : PE8P120A920/4LS7166
: -1

EP type number : 0 412 628 897

Governor

Governer design. : RQ900PA758-13

Governer no. : 0 421 801 501

Cust. part No. : 1305126

Customer-spec. information

Customer : SCANIA

Motor : DS 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 5.10
 Tolerance mm : \pm 0.10
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 909
 guide sleeve
 travel mm : 4.74
 Tolerance mm : \pm 0.25

Rated speed rpm : 630
 guide sleeve
 travel mm : -6.36
 Tolerance mm : \pm 0.25

Rated speed rpm : 1040
 guide sleeve
 travel mm : 16.81
 Tolerance mm : \pm 0.25

Rated speed rpm : 977
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 1040
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

CONTROL LEVER

control lever
 position degree : 24.0
 tolerance degree : \pm 4.0

control lever
 position degree : 86.0
 tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
 rack travel mm : 11.50

Rated speed rpm : 946
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 901
 rack travel mm : 11.50

Rated speed rpm : 947
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 902
 rack travel mm : 11.50

Rated speed rpm : 948
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 903
 rack travel mm : 11.50

Rated speed rpm : 949
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 904
 rack travel mm : 11.50

Rated speed rpm : 950
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 11.50

Rated speed rpm : 951
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97
Test oil : ISO 4113

Combination No. : 0 402 648 883

Injection pump
Pump designation : PE8P120A720LS7125
: -10
EP type number : 0 412 628 891

Governor
Governor design. : RQV300...900PA795
: -11
Governor no. : 0 421 813 847

Cust. part No. : 1305129

Customer-spec. information
Customer : SCANIA
Motor : DS14 48M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 300
 Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 960
 guide sleeve
 travel mm : 8.18
 Tolerance mm : \pm 0.20

 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.56
 Tolerance mm : \pm 0.15

 Rated speed rpm : 688
 guide sleeve
 travel mm : 5.27
 Tolerance mm : \pm 0.25

 Rated speed rpm : 345
 guide sleeve
 travel mm : 2.04
 Tolerance mm : \pm 0.25

 Rated speed rpm : 395
 guide sleeve
 travel mm : 2.62
 Tolerance mm : \pm 0.25

 Rated speed rpm : 450
 guide sleeve
 travel mm : 3.12
 Tolerance mm : \pm 0.25

 Rated speed rpm : 1190
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1035

 Rack travel in mm : 12.50
 Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
 position degree : 47.0
 tolerance degree : \pm 4.0

control lever
 position degree : 105.0
 tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 12.50
 Rated speed rpm : 945
 Tolerance 1/min : \pm 5
 Check
 speed 1/min : \pm 10

rack travel mm : 4.00
 Rated speed rpm : 1040
 Tolerance 1/min : \pm 15
 Check
 speed 1/min : \pm 20

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1150

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : \pm 4.0

control lever
 position degree : 15.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

 CRT mm min. : > 6.30

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.35
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : ± 0.15

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.97
Test oil : ISO 4113

Combination No. : 0 402 716 805

Injection pump
Pump designation : PES6P120A700LS7442
EP type number : 0 412 726 972

Governor
Governor design. :
Governor no. :

Cust. part No. : 0280743902

Customer-spec. information
Customer : MTU
Motor : 6R183-02
Power KW : 369.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 1- 4-
: 2

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.55
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

LOW IDLE

Testing:

D12

Rated speed rpm : 300
rack travel mm : 5.55
Tolerance mm : +- 0.05

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 10.45

Tolerance mm : +- 0.05

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.55

Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 810

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0 412 716 804

Governor
Governor design. : RQV400...1250PA964
: -2K
Governor no. : 0 421 815 254

Cust. part No. : 3921777

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.80
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.80
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : ± 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 13.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 690
rack travel mm : 13.40
Tolerance mm : ± 0.20

Pressure hPa : 365
rack travel mm : 10.25
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97

Test oil : ISO 4113

Combination No. : 0 402 736 811

Injection pump

Pump designation : PES6P110A12ORS7213

EP type number : 0 412 716 804

Governor

Governer design. : RQV400...1250PA964

: -3K

Governer no. : 0 421 815 255

Cust. part No. : 3921776

Customer-spec. information

Customer : CDC

Motor : 6BTA-A

Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 23.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85

Tolerance mm : ± 0.05

Rack travel in mm : 5.60

Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.80
Rated speed rpm : 1295
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 16.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : +- 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85

Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 13.30
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : +- 0.05

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 755
rack travel mm : 13.90
Tolerance mm : +- 0.20

Pressure hPa : 410
rack travel mm : 10.65
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 159.5
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.40
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 856

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0 412 716 804

Governor
Governor design. : RQV350...1250PA964
: -26K
Governor no. : 0 421 815 426

Cust. part No. : 3282240

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.40
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.10
Tolerance mm : +- 0.05

Rated speed rpm : 350
 Rack travel in mm : 5.40
 Tolerance mm : +- 0.10
 Del. quantity
 cm3/1000 strokes : 22.5
 Tolerance
 cm3/1000 strokes : +- 3.0
 Check tolerance
 cm3/1000S. : +- 5.0
 Spreed
 Tolerance
 cm3/1000 strokes : 7.0
 Check tolerance
 cm3/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1346
 guide sleeve
 travel mm : 8.44
 Tolerance mm : +- 0.25

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.94
 Tolerance mm : +- 0.25

Rated speed rpm : 840
 guide sleeve
 travel mm : 4.58
 Tolerance mm : +- 0.25

Rated speed rpm : 403
 guide sleeve
 travel mm : 2.53
 Tolerance mm : +- 0.25

Rated speed rpm : 450
 guide sleeve
 travel mm : 2.76
 Tolerance mm : +- 0.25

Rated speed rpm : 1620
 guide sleeve
 travel mm : 11.50
 Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1

Rated speed rpm : 1440
 Rack travel in mm : 9.00
 Tolerance mm : +- 3.00

CONTROL LEVER

control lever
 position degree : 123.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 15.30
 Rated speed rpm : 1325
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1480
 Tolerance 1/min : +- 15

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
 CRT mm min. : > 7.20

Testing:

Rated speed rpm : 350
 rack travel mm : 5.40
 Tolerance mm : +- 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 15.10
 Tolerance mm : +- 0.05

Rated speed rpm : 800
 rack travel mm : 13.70
 Tolerance mm : +- 0.10

Rated speed rpm : 1250
rack travel mm : 16.30
Tolerance mm : +- 0.10

Rated speed rpm : 400
rack travel mm : 13.70
Tolerance mm : +- 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1800
rack travel mm : 16.30
Tolerance mm : +- 0.10

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 450
rack travel mm : 10.75
Tolerance mm : +- 0.20

Pressure hPa : 1150
rack travel mm : 14.35
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 858

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -28K
Governor no. : 0 421 815 428

Cust. part No. : 3282464

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. L/h : 120
Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.80
Tolerance mm : \pm 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 6.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1400
guide sleeve
travel mm : 10.90
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 119.0

tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200
Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97

Test oil : ICO 4113

Combination No. : 0 402 736 860

Injection pump

Pump designation : PES6P110A120RS7214

EP type number : 0 402 716 805

Governor

Governer design. : RQV350...1200PA964

: -29K

Governer no. : 0 421 815 430

Cust. part No. : 3282466

Customer-spec. information

Customer : CDC

Motor : 6CTA-A

Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.50

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.55
Tolerance mm : \pm 0.05

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.50
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1410
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0

tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm mir. : > 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 7.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 860
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 320
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rack travel in mm : 5.40

Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.08.97
Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ275/1050PA1275
Governor no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information

Customer : RENAULT V.I.
Motor : MICROC62045 F/C41
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.95
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122
guide sleeve
travel mm : 7.06
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 648
guide sleeve
travel mm : 6.18
Tolerance mm : \pm 0.10

Rated speed rpm : 375
guide sleeve
travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 873
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 176.0
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance

cm³/1000S. : \pm 4.0
Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

rack travel mm : -7.70
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : -11.20
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 256.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $<$ -4.20

Testing:

Rated speed rpm : 275
rack travel mm : -6.10
Tolerance mm : \pm 0.10

rack travel mm : -9.70
Rated speed rpm : 365
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

Rated speed rpm : 600
rack travel mm : 0.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -1.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.65
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -0.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -6.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.97
Test oil : ISO 4113

Combination No. : 0 402 746 844

Injection pump
Pump designation : PES6P120A320RS7162
EP type number : 0 412 726 819

Governor
Governor design. : RQ750PA836-2
Governor no. : 0 421 801 628

Cust. part No. :

Customer-spec. information
Customer : PERKINS
Motor : 2006 TAG
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

| | |
|------------------|----------|
| Del. quantity | |
| cm3/1000 strokes | : 380.0 |
| <hr/> | |
| Tolerance | |
| cm3/1000 strokes | : +- 1.0 |
| <hr/> | |
| Check tolerance | |
| cm3/1000S. | : +- 4.0 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| <hr/> | |
| Check tolerance | |
| cm3/1000S. | : 9.0 |
| <hr/> | |

| | |
|------------------|----------|
| Rated speed rpm | : 300 |
| Del. quantity | |
| cm3/1000 strokes | : 41.0 |
| Tolerance | |
| cm3/1000 strokes | : +- 3.0 |
| Check tolerance | |
| cm3/1000S. | : +- 6.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

(E) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-----------------|-----------|
| Rated speed rpm | : 757 |
| guide sleeve | |
| travel mm | : 1.84 |
| Tolerance mm | : +- 0.25 |

| | |
|-----------------|-----------|
| Rated speed rpm | : 930 |
| guide sleeve | |
| travel mm | : 42.98 |
| Tolerance mm | : +- 0.25 |

| | |
|-----------------|-----------|
| Rated speed rpm | : 820 |
| guide sleeve | |
| travel mm | : 9.41 |
| Tolerance mm | : +- 0.25 |

| | |
|-----------------|-----------|
| Rated speed rpm | : 824 |
| guide sleeve | |
| travel mm | : 10.00 |
| Tolerance mm | : +- 0.25 |

| | |
|-----------------|-------|
| Rated speed rpm | : 880 |
|-----------------|-------|

| | |
|--------------|-----------|
| guide sleeve | |
| travel mm | : 11.50 |
| Tolerance mm | : +- 0.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|----------|
| Rated speed rpm | : 700 |
| Aneroid pressure | |
| hPa | : - |
| Del. quantity | |
| cm3/1000 strokes | : 380.0 |
| Tolerance | |
| cm3/1000 strokes | : +- 1.0 |
| Check tolerance | |
| cm3/1000S. | : +- 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| Check tolerance | |
| cm3/1000S. | : 9.0 |

CONTROL LEVER

| | |
|------------------|----------|
| control lever | |
| position degree | : 89.0 |
| tolerance degree | : +- 4.0 |

ASSEMBLY GOVERNOR SETTING

| | |
|-----------------|---------|
| Rated speed rpm | : 750 |
| rack travel mm | : 12.00 |

| | |
|-----------------|--------|
| Rated speed rpm | : 784 |
| Tolerance 1/min | : +- 4 |
| rack travel mm | : 4.00 |

| | |
|-----------------|-----------|
| rack travel mm | : 0.50 |
| Tolerance mm | : +- 0.50 |
| Rated speed rpm | : 820 |

| | |
|-----------------|---------|
| Rated speed rpm | : 751 |
| rack travel mm | : 12.00 |

| | |
|-----------------|--------|
| Rated speed rpm | : 785 |
| Tolerance 1/min | : +- 4 |
| rack travel mm | : 4.00 |

| | |
|-----------------|-----------|
| rack travel mm | : 0.50 |
| Tolerance mm | : +- 0.50 |
| Rated speed rpm | : 820 |

| | |
|-----------------|---------|
| Rated speed rpm | : 752 |
| rack travel mm | : 12.00 |

Rated speed rpm : 786
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 753
rack travel mm : 12.00

Rated speed rpm : 787
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 754
rack travel mm : 12.00

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

Rated speed rpm : 755
rack travel mm : 12.00

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 820

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 320.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113
Combination No. : F 000 409 102
Injection pump
Pump designation : PES6P120A720LS7257
: -11
EP type number : F 000 400 201
Governor
Governor design. : RQV300...950PA1242
Governor no. : 9 420 080 387
Cust. part No. : 0280743302

Customer-spec. information

Customer : MBB
Motor : OM 447LA Euro II
Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.3
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

E08

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 25.0
Tolerance bar : ± 1.0
Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 13.40
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 7.5

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 4.55
Tolerance mm : \pm 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : \pm 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.45
Tolerance mm : \pm 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.55
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1300

Del. quantity
cm3/1000 strokes : 276.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.10
Rated speed rpm : 1025

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1135

Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 13.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 2.40
Tolerance mm : \pm 0.15

Pressure hPa : 550
rack travel mm : 0.75
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1300

Rated speed rpm : 950

Del. quantity

cm³/1000 strokes : 254.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 5.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

Aneroid pressure

hPa : 1300

Rated speed rpm : 750

Del. quantity

cm³/1000 strokes : 268.5

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 5.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm³/1000 strokes : 139.5

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 247.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.08.97
Test oil : ISO 4113

Combination No. : F 000 409 206

Injection pump
Pump designation : PES6A100D120RS2868
EP type number : 9 400 084 037

Governor
Governor design. : RSV435...1200A0C945R
Governor no. : F 000 420 701

Cust. part No. : 3927763

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 6.75
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 8.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 435

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.80
Rated speed rpm : 1245

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1335

Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 83.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 435
rack travel mm : 4.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 20.00

Testing:

Rated speed rpm : 435
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 8.80
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 9.05
Tolerance mm : +- 0.05

Rated speed rpm : 850
rack travel mm : 9.05
Tolerance mm : +- 0.05

Rated speed rpm : 1050
rack travel mm : 8.80
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 11.0

LOW IDLE

Rated speed rpm : 435

Rack travel in mm : 4.80
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.97
Test oil : ISO 4113
Combination No. : 9 407 083 279
Injection pump
Pump designation : PES6A80D320RS1271
EP type number : 9 400 083 058
Governor
Governor design. : RSV350...1400A2C2179
: R
Governor no. : 9 420 083 281
Cust. part No. :

Customer-spec. information

Customer : MWM
Motor : D229-6
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 60.0

Tolerance
cm3/1000 strokes : +- 0.5

Check tolerance
cm3/1000S. : +- 2.0

Speed

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 10.70

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 46.5

Tolerance
cm3/1000 strokes : +- 1.5

Check tolerance
cm3/1000S. : +- 3.5

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.0

(E) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm3/1000 strokes : +- 0.5

Check tolerance
cm3/1000S. : +- 2.0

Speed

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 1435
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 66.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 10.20
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 10.70
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 640
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.0

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 53.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 10.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 46.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.97
Test oil : ISO 4113
Combination No. : F 000 409 204
Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028
Governor
Governor design. : RQV350...1300AB1327L
Governor no. : F 000 420 303

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : 6.10 TCA EURO I
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 6.40
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 800
guide sleeve
travel mm : 3.95
Tolerance mm : +- 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 7.20
Tolerance mm : +- 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : +- 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 2.75
Tolerance mm : +- 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1480

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 111.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.10
Rated speed rpm : 1360
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1545
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1730

LOW IDLE

control lever
position degree : 68.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 2.50
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 1.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113
Combination No. : 0 400 844 047
Injection pump
Pump designation : PES4A90D410RS2294
EP type number : 0 410 894 011
Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 314
Power KW : 62.5

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 630 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quart.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 9.70
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300
Rack travel in mm : 7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : \pm 0.15

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : \pm 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.95
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1420

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 8.80

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : \pm 0.10

Rated speed rpm : 445

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.70
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113

Combination No. : 0 400 846 231

Injection pump
Pump designation : PES6A90D410RS2293
EP type number : 0 410 896 031

Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352
Power KW : 95.6

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.1
Tolerance bar : ± 1.0

Prestroke mm : 2.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.70
Tolerance mm : ± 0.07

Del. quantity
cm³/1000 strokes : 62.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 7.60
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance

cm³/1000 strokes : 2.0
Check tolerance

cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : +- 0.15

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : +- 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : +- 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : +- 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.95
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 62.0

Tolerance
cm³/1000 strokes : +- 0.5

Check tolerance
cm³/1000S. : +- 2.5

Spread
Tolerance

cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 68.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.10

Testing:

Rated speed rpm : 300
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 445

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.70
Tolerance mm : \pm 0.07

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113

Combination No. : 0 400 846 559

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0 410 896 082

Governor
Governor design. : RQV300...1400AB1065
: -9L
Governor no. : 0 420 212 202

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 92.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quantity
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 8.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1445
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1555
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 10.30

Testing:

Rated speed rpm : 300
rack travel mm : 8.80
Tolerance mm : ± 0.10

Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.10
Tolerance mm : ± 0.10

Rated speed rpm : 1100

rack travel mm : 10.40
Tolerance mm : +- 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 300

F02

Rack travel in mm : 8.80
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113
Combination No. : 0 400 876 188
Injection pump
Pump designation : PES6A80D410RS2085X
EP type number : 0 410 886 045
Governor
Governor design. : RSV350...1400A2C1052
: L
Governor no. : 0 420 232 406
Cust. part No. :

Customer-spec. information
Customer : M3-NFZ
Motor : OM352
Power KW : 80.9

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

F03

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 9.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.0
Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 52.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1630

rack travel mm : 4.00
Rated speed rpm : 1530
Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

rack travel mm : 2.00
Rated speed rpm : 530
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.95
Tolerance mm : ± 0.05

Rated speed rpm : 850
rack travel mm : 9.60
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 9.25
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 2.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113

Combination No. : 0 400 876 331

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0 410 896 082

Governor
Governor design. : RSV350...1400A0C2006
: -2L
Governor no. : 0 420 232 453

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.30
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.75
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : +- 0.5

Check tolerance
cm³/1000S. : +- 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 8.10

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.70
Rated speed rpm : 1435
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : \pm 15

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 8.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.97

Test oil : ISO 4113

Combination No. : 0 400 866 189

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A0C2190

: -65R

Governer no. : 0 420 233 304

Cust. part No. : 3921145

Customer-spec. information

Customer : CDC

Motor : 6 CTA 8.3ltr

Power KW : 174.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 129.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 129.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 21.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.97
Test oil : ISO 4113

Combination No. : 0 402 744 806

Injection pump
Pump designation : PES4P120A320RS7431
EP type number : 0 412 724 805

Governor
Governor design. : RQV325...1500PA1333
: -1K
Governor no. : 0 421 815 555

Cust. part No. : 3393633

Customer-spec. information
Customer : CDC
Motor : 4BTA-A
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 3.90
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 15.25
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 206.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 7.80
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 5.0

Speed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1555
guide sleeve
travel mm : 9.02
Tolerance mm : +- 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.21
Tolerance mm : +- 0.20

Rated speed rpm : 1007
guide sleeve
travel mm : 5.41
Tolerance mm : +- 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.15
Tolerance mm : +- 0.25

Rated speed rpm : 1970

guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 206.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.5
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.25
Rated speed rpm : 1565
Tolerance 1/min : +- 5

rack travel mm : 5.50
Rated speed rpm : 1720
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1800

LOW IDLE

control lever
position degree : 75.0
tolerance degree : +- 4.0

Control lever difference

Grad : 41.5
tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 8.10

Testing:

Rated speed rpm : 325
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 14.80
Tolerance mm : \pm 0.20

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : -

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1500
Pressure hPa : 570
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 12.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1100

Del. quantity
cm³/1000 strokes : 192.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 721

Injection pump
Pump designation : PES6A95D320/3RS2895
EP type number : 9 410 037 238

Governor
Governor design. : RSV475...1250AQC839R
Governor no. :

Cust. part No. : 3929601

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 550

Rack travel in mm : 5.50

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000s. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 5.80
Rated speed rpm : 1395
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1460

rack travel mm : 5.80
Rated speed rpm : 1395
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 30.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 11.40
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa :

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 723

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C838R
Governor no. : 9 420 034 708

Cust. part No. : 3929404

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 110.3

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 6.50
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 6.50
Rated speed rpm : 1230
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 88.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 22.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.65
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.15
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 12.65
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.08.97
Test oil : ISO 4113

Combination No. : 0 400 074 778

Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006

Governor
Governor design. : RSF360/1900M79
Governor no. : 0 420 021 280

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 25.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000S. : ± 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 360

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : ± 0.5

Spread

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity

cm³/1000 strokes : 59.5

Tolerance

cm³/1000 strokes : ± 0.7

Check tolerance

cm³/1000S. : ± 1.7

Spread

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 3.5

RATED SPEED

control lever

position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : ± 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 360

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.00

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 12.20

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 5.90

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : ± 0.05

Rated speed rpm : 1500

rack travel mm : 12.90

Tolerance mm : ± 0.10

Rated speed rpm : 1900

rack travel mm : 12.15

Tolerance mm : ± 0.15

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1600
rack travel mm : -0.25
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1100
rack travel mm : -2.65
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -4.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 56.4
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1900
Spreed
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.2
Check tolerance
cm³/1000S. : \pm 2.2
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 900

Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 0.7
Check tolerance
cm³/1000S. : \pm 1.7
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 0.7
Check tolerance
cm³/1000S. : \pm 1.7
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 2200
rack travel mm : 8.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.2
Check tolerance
cm³/1000S. : \pm 3.2
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : > 20.10
Del. quantity
cm³/1000 strokes : 52.8
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

LOW IDLE

Rated speed rpm : 360
rack travel mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 12.0
tolerance degree : \pm 2.0

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

Rated speed rpm : 360
Rack travel in mm : 13.80
Tolerance mm : \pm 0.70
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : \pm 3.5
Current A : 1.80
Rated speed rpm : 2600
Rack travel in mm : 0.50

Tolerance mm : \pm 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 360
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.08.97
Test oil : ISO 4113

Combination No. : 0 400 074 876

Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006

Governor
Governor design. : RSF360/1900M84
Governor no. : 0 420 021 287

Cust. part No. :

Customer-spec. information
Customer : MB-PK11
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

F26

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000S. : ± 1.7

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 360

Rack travel in mm : 5.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 6.5

Tolerance
cm³/1000 strokes : \pm 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure
ALDA / ADA hPa : 1850

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : \pm 0.7

Check tolerance
cm³/1000S. : \pm 1.7

Spreed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2150
rack travel mm : 6.60

Tolerance mm : \pm 0.20

Rated speed rpm : 2600
rack travel mm : 0.50

F2"

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever
position degree : 12.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 360

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.00

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 12.20

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 5.90

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : \pm 0.05

Rated speed rpm : 1500

rack travel mm : 12.90

Tolerance mm : \pm 0.10

Rated speed rpm : 1900

rack travel mm : 12.15

Tolerance mm : \pm 0.15

Rated speed rpm : 500

rack travel mm : 15.30

Tolerance mm : \pm 0.30

Rated speed rpm : 900

rack travel mm : 11.15
Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1600
rack travel mm : -0.25
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Ref. pressure
ALDA / ADA hPa : 1100
rack travel mm : -2.65
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -4.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 56.4
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 1900
Spreed
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.2
Check tolerance
cm³/1000S. : \pm 2.2
Spreed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 0.7
Check tolerance
cm³/1000S. : \pm 1.7
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 64.3
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 0.7
Check tolerance
cm³/1000S. : \pm 1.7
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1850
Rated speed rpm : 2150
rack travel mm : 6.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 21.4
Tolerance
cm³/1000 strokes : \pm 2.2

Check tolerance
cm³/1000S. : ± 3.2
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : > 20.10
Del. quantity
cm³/1000 strokes : 52.8
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

LOW IDLE

Rated speed rpm : 360
rack travel mm : 5.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : ± 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : ± 2.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Rated speed rpm : 360
Rack travel in mm : 13.80
Tolerance mm : ± 0.70

Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : ± 3.5

Current A : 1.80

Rated speed rpm : 2600

Rack travel in mm : 0.50
Tolerance mm : ± 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 360
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.97
Test oil : ISO 4113
Combination No. : 0 400 074 883
Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006
Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000S. : ± 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 375

Rack travel in mm : 5.90

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(8) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity

cm³/1000 strokes : 59.5

Tolerance

cm³/1000 strokes : \pm 0.7

Check tolerance

cm³/1000S. : \pm 1.7

Speed

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : \pm 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 13.00

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 5.90

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : \pm 0.05

Rated speed rpm : 1500

rack travel mm : 12.90

Tolerance mm : \pm 0.10

Rated speed rpm : 1900

rack travel mm : 12.15

Tolerance mm : \pm 0.10

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 56.4
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm3/1000 strokes : 54.0
 Tolerance
 cm3/1000 strokes : \pm 1.2
 Check tolerance
 cm3/1000S. : \pm 2.2
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm3/1000 strokes : 43.0
 Tolerance
 cm3/1000 strokes : \pm 0.7
 Check tolerance
 cm3/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm3/1000 strokes : 43.0
 Tolerance
 cm3/1000 strokes : \pm 0.7
 Check tolerance
 cm3/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : \pm 2.2
 Check tolerance
 cm3/1000S. : \pm 3.2
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm3/1000 strokes : 52.8
 Tolerance
 cm3/1000 strokes : \pm 4.0
 Check tolerance
 cm3/1000S. : \pm 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : +- 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : +- 2.0

Rated speed rpm : 425

Rack travel in mm : 7.65
Tolerance mm : +- 0.80
Del. quantity
cm³/1000 strokes : 17.3
Tolerance
cm³/1000 strokes : +- 4.5
Check tolerance
cm³/1000S. : +- 5.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113

Combination No. : 0 400 074 883F3

Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006

Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

G06

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 59.5

Tolerance
cm3/1000 strokes : ± 0.7

Check tolerance
cm3/1000s. : ± 1.7

Spreed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
 cm3/1000S. : 3.5
 Rated speed rpm : 375
 Rack travel in mm : 5.90
 Tolerance mm : +- 0.10
 Del. quantity
 cm3/1000 strokes : 6.5
 Tolerance
 cm3/1000 strokes : +- 0.5
 Spreed
 Tolerance
 cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00
 Tolerance mm : +- 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hFa : 1850
 Del. quantity
 cm3/1000 strokes : 59.5
 Tolerance
 cm3/1000 strokes : +- 0.7
 Check tolerance
 cm3/1000S. : +- 1.7
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

RATED SPEED

control lever
 position degree : 50.0
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : +- 0.20
 Rated speed rpm : 2600
 rack travel mm : 0.50
 Tolerance mm : +- 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900
 CRT mm max. : 1.95

LOW IDLE

control lever
 position degree : 12.0
 tolerance degree : +- 2.0

Setting point w/out bumper spring

Rated speed rpm : 375
 rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500
 rack travel mm : 4.20
 Tolerance mm : +- 0.10

Load pick-up

Rated speed rpm : 200
 rack travel mm : 13.00

Rated speed rpm : 900
 CRT mm max. : 1.95
 rack travel mm : 5.90
 Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 13.80
 Tolerance mm : +- 0.05

Rated speed rpm : 1500
 rack travel mm : 12.90
 Tolerance mm : +- 0.10

Rated speed rpm : 1900
 rack travel mm : 12.15
 Tolerance mm : +- 0.10

Rated speed rpm : 900
 rack travel mm : 11.15
 Tolerance mm : +- 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : +- 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 56.4
 Tolerance
 cm3/1000 strokes : +- 1.0
 Check tolerance
 cm3/1000S. : +- 2.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm3/1000 strokes : 54.0
 Tolerance
 cm3/1000 strokes : +- 1.2
 Check tolerance
 cm3/1000S. : +- 2.2
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm3/1000 strokes : 43.0
 Tolerance
 cm3/1000 strokes : +- 0.7
 Check tolerance
 cm3/1000S. : +- 1.7
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm3/1000 strokes : 43.0
 Tolerance
 cm3/1000 strokes : +- 0.7
 Check tolerance
 cm3/1000S. : +- 1.7
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : +- 0.20
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : +- 2.2
 Check tolerance
 cm3/1000S. : +- 3.2
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm3/1000 strokes : 52.8
 Tolerance
 cm3/1000 strokes : +- 4.0
 Check tolerance
 cm3/1000S. : +- 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Speed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 7.65
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 17.3
Tolerance
cm³/1000 strokes : \pm 4.5
Check tolerance
cm³/1000S. : \pm 5.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113
Combination No. : 0 400 074 883Y
Injection pump
Pump designation : PES/M60C32ORS185
EP type number : 0 410 064 006
Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

G10

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 21.00
Tolerance mm : +- 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-9C-180-27C

Start of delivery blocking

*NW after s.o.d. : 17.00
Tolerance : +- 0.20
Check
tolerance *NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : +- 0.7

Check tolerance
cm³/1000S. : +- 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 375

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 6.5

Tolerance
cm³/1000 strokes : ± 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000S. : ± 1.7

Spreed
Tolerance

cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : ± 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 13.00

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 5.90

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : ± 0.05

Rated speed rpm : 1500

rack travel mm : 12.90

Tolerance mm : ± 0.10

Rated speed rpm : 1900

rack travel mm : 12.15

Tolerance mm : ± 0.10

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm³/1000 strokes : 56.4
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : \pm 1.2
 Check tolerance
 cm³/1000S. : \pm 2.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : \pm 2.2
 Check tolerance
 cm³/1000S. : \pm 3.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm³/1000 strokes : 52.8
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 7.65
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 17.3
Tolerance
cm³/1000 strokes : \pm 4.5
Check tolerance
cm³/1000S. : \pm 5.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.02.97
Test oil : ISO 4113
Combination No. : 0 400 074 884
Injection pump
Pump designation : PES4M55C32ORS164
EP type number : 0 410 054 938
Governor
Governor design. : RSF375/1900M77
Governor no. : 0 420 021 273

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 58.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 39.4

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 375

Rack travel in mm : 4.70

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25

Tolerance mm : \pm 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 39.4

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 5.60

Tolerance mm : \pm 0.25

Rated speed rpm : 2400

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever

position degree : 14.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 4.70

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450

rack travel mm : 3.40

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 13.75

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 4.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.35

Tolerance mm : \pm 0.05

Rated speed rpm : 1850

rack travel mm : 12.30

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 940

rack travel mm : -0.10

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : \pm 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1850
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
rack travel mm : 5.60
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : \pm 1.50

Del. quantity
cm³/1000 strokes : 59.8
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 47.00

control lever
position degree : < 44.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 7.00
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 15.3
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 06.09.96

Test oil : ISO 4113

Combination No. : 0 401 846 994

Injection pump

Pump designation : PE6P110A320RS3374

EP type number : 0 411 816 800

Governor

Governor design. : RQV300...1100PA1182

Governor no. : 0 421 814 110

Cust. part No. : 11032709 P01 v.08.96

Customer-spec. information

Customer : VCE

Motor : TD63KBE LAD.L90C

Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 101

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 12.00

Tolerance mm : ± 0.05

| | |
|---------------------------------|---------|
| Del. quantity | ----- |
| cm ³ /1000 strokes : | 140.0 |
| Tolerance | ----- |
| cm ³ /1000 strokes : | + - 1.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | + - 3.0 |
| Speed | ----- |
| Tolerance | ----- |
| cm ³ /1000 strokes : | 6.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | 10.0 |

| | |
|---------------------------------|----------|
| Rated speed rpm : | 300 |
| Rack travel in mm : | 5.80 |
| Tolerance mm : | + - 0.20 |
| Del. quantity | ----- |
| cm ³ /1000 strokes : | 26.0 |
| Tolerance | ----- |
| cm ³ /1000 strokes : | + - 2.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | + - 5.0 |
| Speed | ----- |
| Tolerance | ----- |
| cm ³ /1000 strokes : | 4.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | 6.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-------------------|----------|
| Rated speed rpm : | 1172 |
| guide sleeve | ----- |
| travel mm : | 8.69 |
| Tolerance mm : | + - 0.15 |
| Rated speed rpm : | 300 |
| guide sleeve | ----- |
| travel mm : | 1.48 |
| Tolerance mm : | + - 0.20 |
| Rated speed rpm : | 822 |
| guide sleeve | ----- |
| travel mm : | 5.40 |
| Tolerance mm : | + - 0.25 |
| Rated speed rpm : | 510 |

| | |
|-------------------|----------|
| guide sleeve | ----- |
| travel mm : | 3.11 |
| Tolerance mm : | + - 0.25 |
| Rated speed rpm : | 1390 |
| guide sleeve | ----- |
| travel mm : | 11.50 |
| Tolerance mm : | + - 0.50 |

GUIDE SLEEVE POSITION

| | |
|---------------------|----------|
| control lever | ----- |
| position degree : | - 1 |
| Rated speed rpm : | 1229 |
| Rack travel in mm : | 11.30 |
| Tolerance mm : | + - 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|---------------------------------|---------|
| Rated speed rpm : | 1025 |
| Aneroid pressure | ----- |
| hPa : | 1500 |
| Del. quantity | ----- |
| cm ³ /1000 strokes : | 140.0 |
| Tolerance | ----- |
| cm ³ /1000 strokes : | + - 1.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | + - 3.0 |
| Speed | ----- |
| Tolerance | ----- |
| cm ³ /1000 strokes : | 6.0 |
| Check tolerance | ----- |
| cm ³ /1000S. : | 10.0 |

CONTROL LEVER

| | |
|--------------------|---------|
| control lever | ----- |
| position degree : | 49.0 |
| tolerance degree : | + - 4.0 |
| control lever | ----- |
| position degree : | 117.0 |
| tolerance degree : | + - 4.0 |
| RATED SPEED | ----- |
| rack travel mm : | 11.00 |
| Rated speed rpm : | 1160 |
| Tolerance 1/min : | + - 5 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1250 |
| Tolerance 1/min : | + - 15 |
| rack travel mm : | 0.50 |

Tolerance mm : \pm 0.50
Rated speed rpm : 1330

LOW IDLE

control lever
position degree : 85.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 8.61

Testing:

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : \pm 0.20

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 12.40
Tolerance mm : \pm 0.15

Rated speed rpm : 820
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 625
rack travel mm : 12.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1500
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 625
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 625

Pressure hPa : 760
rack travel mm : 2.60
Tolerance mm : \pm 0.20

Pressure hPa : 80
rack travel mm : 0.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.97
Test oil : ISO 4113

Combination No. : 0 402 646 626

Injection pump
Pump designation : PE6P120A32ORS7299
EP type number : 0 412 626 885

Governor
Governor design. : RQV275...1000PA1076K
Governor no. : 0 421 815 357

Cust. part No. : 1280160

Customer-spec. information
Customer : DAF
Motor : WS 268 M
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.80

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 17.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(P) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
guide sleeve
travel mm : 9.82
Tolerance mm : +- 0.20

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : +- 0.15

Rated speed rpm : 689
guide sleeve
travel mm : 6.43
Tolerance mm : +- 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : +- 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.17
Tolerance mm : +- 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.79
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 12.60
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 250.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.55
Rated speed rpm : 1042
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : +- 15

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 275
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 720
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Pressure hPa : 360
rack travel mm : 9.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.09.97

Test oil : ISO 4113

Combination No. : 0 402 646 678

Injection pump

Pump designation : PE6P120A720RS7441

EP type number : 0 412 626 967

Governor

Governor design. : RQV250...1050PA1354

Governor no. : 0 421 814 199

Cust. part No. :

Customer-spec. information

Customer : MIELEC

Motor : MD 111E

Power KW : 225.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 240

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.25

Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.45

Tolerance mm : ± 0.05

| | |
|--|---------|
| Del. quantity cm ³ /1000 strokes | : 216.0 |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 4.0 |
| Spreed | |
| Tolerance cm ³ /1000 strokes | : 5.0 |
| Check tolerance cm ³ /1000S. | : 9.0 |

| | |
|--|----------|
| Rated speed rpm | : 250 |
| Rack travel in mm | : 6.10 |
| Tolerance mm | : ± 0.10 |
| Del. quantity cm ³ /1000 strokes | : 13.5 |
| Tolerance cm ³ /1000 strokes | : ± 2.0 |
| Check tolerance cm ³ /1000S. | : ± 5.0 |
| Spreed | |
| Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|---------------------------|----------|
| Rated speed rpm | : 1125 |
| guide sleeve travel mm | : 8.84 |
| Tolerance mm | : ± 0.15 |
| Rated speed rpm | : 250 |
| guide sleeve travel mm | : 1.26 |
| Tolerance mm | : ± 0.20 |
| Rated speed rpm | : 777 |
| guide sleeve travel mm | : 5.55 |
| Tolerance mm | : ± 0.25 |
| Rated speed rpm | : 460 |

| | |
|---------------------------|----------|
| guide sleeve travel mm | : 3.23 |
| Tolerance mm | : ± 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 1330 |
| guide sleeve travel mm | : 11.50 |
| Tolerance mm | : ± 0.50 |

GUIDE SLEEVE POSITION

| | |
|----------------------------------|--------|
| control lever position degree | : - 1 |
| Rated speed rpm | : 1175 |

| | |
|-------------------|----------|
| Rack travel in mm | : 11.45 |
| Tolerance mm | : ± 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--|---------|
| Rated speed rpm | : 1050 |
| Aneroid pressure hPa | : 1500 |
| Del. quantity cm ³ /1000 strokes | : 216.0 |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 4.0 |
| Spreed | |
| Tolerance cm ³ /1000 strokes | : 5.0 |
| Check tolerance cm ³ /1000S. | : 9.0 |

CONTROL LEVER

| | |
|----------------------------------|---------|
| control lever position degree | : 57.0 |
| tolerance degree | : ± 4.0 |

| | |
|----------------------------------|---------|
| control lever position degree | : 119.0 |
| tolerance degree | : ± 4.0 |

| | |
|-----------------|---------|
| RATED SPEED | |
| rack travel mm | : 11.40 |
| Rated speed rpm | : 1113 |
| Tolerance 1/min | : ± 5 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1205 |
| Tolerance 1/min | : ± 15 |

| | |
|----------------|--------|
| rack travel mm | : 0.50 |
|----------------|--------|

Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 8.40

Testing:

Rated speed rpm : 250
rack travel mm : 6.10
Tolerance mm : \pm 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 475
rack travel mm : 11.70
Tolerance mm : \pm 0.15

Pressure hPa : 550
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 213.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.00
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.97
Test oil : ISO 4113

Combination No. : 0 402 678 812

Injection pump
Pump designation : PE8P120A320LS7801-2
EP type number : 0 412 628 825

Governor
Governor design. : RSV350...1050POA535
: -2
Governor no. : 0 421 833 318

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM442A *
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0
Tolerance

cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1075
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : ± 35

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 12.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 14.50
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 830
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 420
rack travel mm : 0.80
Tolerance mm : \pm 0.05

Pressure hPa : 575
rack travel mm : 1.90
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.97

Test oil : ISO 4113

Combination No. : 0 402 678 839

Injection pump

Pump designation : PE8P120A320LS7912

EP type number : 0 412 628 927

Governor

Governer design. : RSV550...1050POA681

Governer no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer-spec. information

Customer : MB-NFZ

Motor : OM402LA, Euro

Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values -----

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1110
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1071
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1111
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1072
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1112
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1073
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1113
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1074
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1114
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1075
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1115
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

H07

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : \pm 0.15

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 12.40
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.15

Pressure hPa : 650
rack travel mm : 13.40
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.97
Test oil : ISO 4113

Combination No. : 0 402 716 805

Injection pump
Pump designation : PES6P120A700LS7442
EP type number : 0 412 726 972

Governor
Governor design. :
Governor no. :

Cust. part No. : 0280743902

Customer-spec. information
Customer : MTU
Motor : 6R183-02
Power KW : 369.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 240
Tolerance l/h : +- 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.35
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 20.50
Tolerance mm : +- 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10
Check
tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 7.80
Tolerance mm : +- 0.05

| | |
|---------------------------------|-------|
| <hr/> | |
| Del. quantity | |
| cm ³ /1000 strokes : | 184.0 |
| <hr/> | |
| Tolerance | |
| cm ³ /1000 strokes : | ± 1.0 |
| <hr/> | |
| Check tolerance | |
| cm ³ /1000S. : | ± 4.0 |
| <hr/> | |
| Spreed | |
| <hr/> | |
| Tolerance | |
| cm ³ /1000 strokes : | 5.0 |
| <hr/> | |
| Check tolerance | |
| cm ³ /1000S. : | 9.0 |
| <hr/> | |

| | |
|---------------------------------|--------|
| Rated speed rpm : | 300 |
| <hr/> | |
| Rack travel in mm : | 4.10 |
| Tolerance mm : | ± 0.20 |
| Del. quantity | |
| cm ³ /1000 strokes : | 18.0 |
| Tolerance | |
| cm ³ /1000 strokes : | ± 3.0 |
| Check tolerance | |
| cm ³ /1000S. : | ± 6.0 |
| Spreed | |
| Tolerance | |
| cm ³ /1000 strokes : | 8.0 |
| Check tolerance | |
| cm ³ /1000S. : | 12.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|---------------------------------|-------|
| Rated speed rpm : | 750 |
| Aneroid pressure | |
| hPa : | - |
| Del. quantity | |
| cm ³ /1000 strokes : | 184.0 |
| Tolerance | |
| cm ³ /1000 strokes : | ± 1.0 |
| Check tolerance | |
| cm ³ /1000S. : | ± 4.0 |
| Spreed | |
| Tolerance | |
| cm ³ /1000 strokes : | 5.0 |
| Check tolerance | |
| cm ³ /1000S. : | 9.0 |

LOW IDLE

Testing:

| | |
|-------------------|--------|
| Rated speed rpm : | 300 |
| rack travel mm : | 4.10 |
| Tolerance mm : | ± 0.20 |

TORQUE CONTROL

| | |
|-------------------|--------|
| Rated speed rpm : | 750 |
| rack travel mm : | 7.80 |
| Tolerance mm : | ± 0.05 |

LOW IDLE

| | |
|---------------------------------|--------|
| Rated speed rpm : | 300 |
| <hr/> | |
| Rack travel in mm : | 4.10 |
| Tolerance mm : | ± 0.20 |
| Del. quantity | |
| cm ³ /1000 strokes : | 18.0 |
| Tolerance | |
| cm ³ /1000 strokes : | ± 3.0 |
| Check tolerance | |
| cm ³ /1000S. : | ± 6.0 |
| Spreed | |
| Tolerance | |
| cm ³ /1000 strokes : | 8.0 |
| Check tolerance | |
| cm ³ /1000S. : | 12.0 |

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.09.97
Test oil : ISC 4113
Combination No. : 0 402 736 850
Injection pump
Pump designation : PES6P120A720/3LS7251
EP type number : 0 412 726 860

Governor
Governor design. : RQV300...1000PA962
: -11K
Governor no. : C 421 815 410

Cust. part No. : 3-7372

Customer-spec. information
Customer : MAN
Motor : D2866LF09
Power kW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

H11

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 294.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 8.74
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 2.79
Tolerance mm : ± 0.10

Rated speed rpm : 810

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.20

Rated speed rpm : 330
guide sleeve
travel mm : 3.33
Tolerance mm : ± 0.20

Rated speed rpm : 380
guide sleeve
travel mm : 3.96
Tolerance mm : ± 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 4.33
Tolerance mm : ± 0.20

Rated speed rpm : 1211
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.20

Rated speed rpm : 1300
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 13.00
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 294.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 289.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 245.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.30

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 750

H13

rack travel mm : 6.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 930
Pressure hPa : 1300
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 720
rack travel mm : 11.90
Tolerance mm : \pm 0.20

Pressure hPa : 220
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1300

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.20
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.09.97

Test oil : ISO 4113

Combination No. : 0 402 736 883

Injection pump

Pump designation : PES6P120A720/3LS7251
: -1

EP type number : 0 412 726 926

Governor

Governor design. : RQV300...1000PA962
: -11K

Governor no. : 0 421 815 410

Cust. part No. : 3-7398

Customer-spec. information

Customer : MAN

Motor : D2866LF09

Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 105

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

H15

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 15.50

Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 294.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 8.74
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.79

Tolerance mm : \pm 0.25

Rated speed rpm : 810
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.25

Rated speed rpm : 330
guide sleeve
travel mm : 3.33
Tolerance mm : \pm 0.25

Rated speed rpm : 380
guide sleeve
travel mm : 3.96
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.33
Tolerance mm : \pm 0.25

Rated speed rpm : 1211
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 13.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 294.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 289.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 245.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.30

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 6.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1300
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 720
rack travel mm : 11.90
Tolerance mm : \pm 0.20

Pressure hPa : 220
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.97
Test oil : ISO 4113

Combination No. : 0 402 746 604

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQV275...1100PA1208
: -1K
Governor no. : 0 421 815 492

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41C-3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 20.50
Tolerance mm : +- 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery mark

Check
tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.30
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1180
guide sleeve

travel mm : 10.07
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve

travel mm : 1.70
Tolerance mm : \pm 0.20

Rated speed rpm : 802
guide sleeve

travel mm : 6.49
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve

travel mm : 3.77

H20

Tolerance mm : \pm 0.25

Rated speed rpm : 1440

guide sleeve

travel mm : 13.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1295

Rack travel in mm : 10.65

Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 201.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

Check

speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1245

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.90

Testing:

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : \pm 0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 11.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.30

Pressure hPa : 300
rack travel mm : 10.65
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 080

Injection pump
Pump designation : PE6P12CA320RS804+
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...1050PA1027K
Governor no. : 0 421 815 311

Cust. part No. : 11031995
: -P01 V.08/96

Customer-spec. information
Customer : VCE
Motor : TD122KHE
Power KW : 209.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

H23

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 10.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1105
guide sleeve
travel mm : 9.77
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.01
Tolerance mm : ± 0.20

Rated speed rpm : 775
guide sleeve
travel mm : 6.42
Tolerance mm : ± 0.25

Rated speed rpm : 470

guide sleeve
travel mm : 3.79
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1234

Rack travel in mm : 9.40
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1085
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1270

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 690
rack travel mm : 10.30
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

H25

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 640
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.97
Test oil : ISO 4113
Combination No. : 0 403 476 112C
Injection pump
Pump designation : PES6MW100/720RS1225
: -1
EP type number : 0 413 406 220
Governor
Governor design. : RSV40C...1000MW1A338
: -1
Governor no. : 0 420 085 184
Cust. part No. : 9880790

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 T-EA2
Power kW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 049
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 12.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 132.5
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 1.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 950
Del. quantity
cm³/1000 strokes : 132.5
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 925
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 960
Tolerance 1/min : +- 10

rack travel mm : 1.00
Tolerance mm : +- 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : +- 10

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 400
rack travel mm : 5.80
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : 950
rack travel mm : 12.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 12.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 950
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : 950
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.97
Test oil : ISO 4113
Combination No. : F 000 409 888
Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028
Governor
Governor design. : RQV350...1300
Governor no. : 9 420 083 177

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : 6.10 TCA EURO II
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.0

| | |
|-------------------------------|----------|
| Tolerance | |
| cm ³ /1000 strokes | : + 1.0 |
| <hr/> | |
| Check tolerance | |
| cm ³ /1000S. | : + 3.0 |
| <hr/> | |
| Spread | |
| <hr/> | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| <hr/> | |
| Check tolerance | |
| cm ³ /1000S. | : 8.0 |
| <hr/> | |
| | |
| Rated speed rpm | : 350 |
| | |
| Rack travel in mm | : 6.10 |
| Tolerance mm | : + 0.10 |
| Del. quantity | |
| cm ³ /1000 strokes | : 16.0 |
| Tolerance | |
| cm ³ /1000 strokes | : + 2.0 |
| Check tolerance | |
| cm ³ /1000S. | : + 4.5 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 5.5 |
| Check tolerance | |
| cm ³ /1000S. | : 9.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-----------------|----------|
| Rated speed rpm | : 800 |
| guide sleeve | |
| travel mm | : 3.95 |
| Tolerance mm | : + 0.25 |
| | |
| Rated speed rpm | : 1350 |
| guide sleeve | |
| travel mm | : 7.20 |
| Tolerance mm | : + 0.10 |
| | |
| Rated speed rpm | : 300 |
| guide sleeve | |
| travel mm | : 1.05 |
| Tolerance mm | : + 0.25 |
| | |
| Rated speed rpm | : 550 |
| guide sleeve | |
| travel mm | : 2.75 |
| Tolerance mm | : + 0.25 |
| | |
| Rated speed rpm | : 1500 |

| | |
|--------------|----------|
| guide sleeve | |
| travel mm | : 8.55 |
| Tolerance mm | : + 0.25 |

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| control lever | |
| position degree | : - 3 |
| Rated speed rpm | : 1485 |
| | |
| Rack travel in mm | : 16.50 |
| Tolerance mm | : + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-------------------------------|---------|
| Rated speed rpm | : 1300 |
| Aneroid pressure | |
| hPa | : 1200 |
| Del. quantity | |
| cm ³ /1000 strokes | : 118.0 |
| Tolerance | |
| cm ³ /1000 strokes | : + 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : + 3.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 8.0 |

CONTROL LEVER

| | |
|------------------|----------|
| control lever | |
| position degree | : 118.0 |
| tolerance degree | : + 4.0 |
| | |
| RATED SPEED | |
| rack travel mm | : 12.40 |
| Rated speed rpm | : 1390 |
| Tolerance 1/min | : + 5 |
| | |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1560 |
| Tolerance 1/min | : + 15 |
| | |
| rack travel mm | : 0.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1730 |

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : \pm 0.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 210
rack travel mm : 1.30
Tolerance mm : \pm 0.10

Pressure hPa : 130
rack travel mm : 0.40
Tolerance mm : \pm 0.05

Pressure hPa : 760
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Pressure hPa : 410
rack travel mm : 2.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 180

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 115.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 49.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97
Test oil : ISO 4113

Combination No. : 0 400 866 230

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C874L
Governor no. : 0 420 232 629

Cust. part No. : 0423 2054 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF6L 913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 93.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Tolerance mm : +- 0.10

Del. quantity

cm³/1000 strokes : 11.5

Tolerance

cm³/1000 strokes : +- 2.0

Check tolerance

cm³/1000S. : +- 4.5

Spreed

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : FREE

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : +- 0.20

governor spring

pre-tension

click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 93.0

Tolerance

cm³/1000 strokes : +- 1.0

Check tolerance

cm³/1000S. : +- 3.0

Spreed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 104.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1295

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : +- 15

rack travel mm : 0.35

Tolerance mm : +- 0.55

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1400

Tolerance 1/min : +- 15

LOW IDLE

control lever

position degree : 70.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.70

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325

rack travel mm : 8.20

Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 560

Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.20

Tolerance mm : +- 0.05
Rated speed rpm : 500
rack travel mm : 13.25
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.20
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.97
Test oil : ISO 4113

Combination No. : 0 402 066 707

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1100P2A618
Governor no. : 0 421 833 513

Cust. part No. : 3927356

Customer-spec. information
Customer : CDC
Motor : 6BTA ELITE
Power KW : 136.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

| | |
|-----------------------------------|----------|
| Del. quantity cm3/1000 strokes | : 146.5 |
| Tolerance cm3/1000 strokes | : +- 1.0 |
| Check tolerance cm3/1000S. | : +- 3.0 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 4.0 |
| Check tolerance cm3/1000S. | : 7.5 |

| | |
|-----------------------------------|-----------|
| Rated speed rpm | : 475 |
| Rack travel in mm | : 5.40 |
| Tolerance mm | : +- 0.10 |
| Del. quantity cm3/1000 strokes | : 24.5 |
| Tolerance cm3/1000 strokes | : +- 2.0 |
| Check tolerance cm3/1000S. | : +- 4.5 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 6.0 |
| Check tolerance cm3/1000S. | : 9.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|---|-----------|
| control lever position degree | : - 3 |
| Rated speed rpm | : 800 |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : +- 0.20 |
| governor spring pre-tension click setting x | : 3.75 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-----------------|--------|
| Rated speed rpm | : 1100 |
|-----------------|--------|

| | |
|-----------------------------------|----------|
| Aneroid pressure hPa | : 1200 |
| Del. quantity cm3/1000 strokes | : 146.5 |
| Tolerance cm3/1000 strokes | : +- 1.0 |
| Check tolerance cm3/1000S. | : +- 3.0 |
| Spreed | |
| Tolerance cm3/1000 strokes | : 4.0 |
| Check tolerance cm3/1000S. | : 7.5 |

CONTROL LEVER

| | |
|----------------------------------|----------|
| control lever position degree | : 103.0 |
| tolerance degree | : +- 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 10.30 |
| Rated speed rpm | : 1175 |
| Tolerance 1/min | : +- 5 |

| | |
|-----------------|--------|
| rack travel mm | : 6.50 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : +- 5 |

| | |
|-----------------|-----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : +- 0.55 |
| Rated speed rpm | : 1375 |

LOW IDLE

| | |
|----------------------------------|----------|
| control lever position degree | : 81.0 |
| tolerance degree | : +- 4.0 |

Control lever difference

| | |
|------------------|----------|
| Grad | : 19.0 |
| tolerance degree | : +- 6.0 |

Setting point w/out bumper spring

| | |
|-----------------|-----------|
| Rated speed rpm | : 475 |
| rack travel mm | : 4.90 |
| Tolerance mm | : +- 0.05 |

| | |
|-----------------|-------|
| Rated speed rpm | : 100 |
|-----------------|-------|

| | |
|-------------|-----------|
| CRT mm min. | : > 19.00 |
|-------------|-----------|

Testing:

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Pressure hPa : 545
rack travel mm : 9.75
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 96.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spræed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.97
Test oil : ISO 4113

Combination No. : 9 400 030 695

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C825R
Governor no. : 9 420 034 701

Cust. part No. : 3928665

Customer-spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.45
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.55
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1335
Tolerance 1/min : +- 5

rack travel mm : 6.80
Rated speed rpm : 1395
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1450

rack travel mm : 6.80
Rated speed rpm : 1395
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

Control lever difference
Grad : 27.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.30
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475

rack travel mm : 5.80
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 460
rack travel mm : 11.75
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.05.97
Test oil : ISO 4113

Combination No. : 9 400 030 731

Injection pump
Pump designation : FES6A95D320/3RS2081
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...110CA0C843R
Governor no. : 9 420 034 709

Cust. part No. : 3929406

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 94.0

| | |
|-------------------------------|----------|
| Tolerance | |
| cm ³ /1000 strokes | : +- 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : +- 3.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 6.0 |

| | |
|-------------------------------|-----------|
| Rated speed rpm | : 500 |
| Rack travel in mm | : 5.10 |
| Tolerance mm | : +- 0.10 |
| Del. quantity | |
| cm ³ /1000 strokes | : 18.5 |
| Tolerance | |
| cm ³ /1000 strokes | : +- 2.0 |
| Check tolerance | |
| cm ³ /1000S. | : +- 4.5 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 5.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|-------------------|-----------|
| control lever | |
| position degree | : - 3 |
| Rated speed rpm | : 800 |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : +- 0.20 |
| governor spring | |
| pre-tension | |
| click setting x | : 4.00 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|--------|
| Rated speed rpm | : 1100 |
| Aneroid pressure | |
| hPa | : 900 |

| | |
|-------------------------------|----------|
| Del. quantity | |
| cm ³ /1000 strokes | : 94.0 |
| Tolerance | |
| cm ³ /1000 strokes | : +- 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : +- 3.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 6.0 |

CONTROL LEVER

| | |
|------------------|----------|
| control lever | |
| position degree | : 107.0 |
| tolerance degree | : +- 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 10.20 |
| Rated speed rpm | : 1165 |
| Tolerance 1/min | : +- 5 |

| | |
|-----------------|--------|
| rack travel mm | : 5.40 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : +- 5 |

| | |
|-----------------|-----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : +- 0.55 |
| Rated speed rpm | : 1300 |

| | |
|-----------------|---------|
| rack travel mm | : 5.40 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : +- 15 |

LOW IDLE

| | |
|------------------|----------|
| control lever | |
| position degree | : 86.0 |
| tolerance degree | : +- 4.0 |

| | |
|--------------------------|----------|
| Control lever difference | |
| Grad | : 21.0 |
| tolerance degree | : +- 6.0 |

Setting point w/out bumper spring

| | |
|-----------------|-----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 4.60 |
| Tolerance mm | : +- 0.10 |

| | |
|-----------------|-------|
| Rated speed rpm | : 100 |
|-----------------|-------|

| | |
|-------------|-----------|
| CRT mm min. | : > 19.00 |
|-------------|-----------|

Testing:

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.05
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 11.75
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 107.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.12.96
Test oil : ISO 4113

Combination No. : 9 400 030 734

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1100AOC847R
Governor no. : 9 420 034 713

Cust. part No. : 3930153

Customer-spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 109.5

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : ± 1.0 |
| <hr/> | |
| Check tolerance | |
| cm3/1000S. | : ± 3.0 |
| <hr/> | |
| Speed | |
| <hr/> | |
| Tolerance | |
| cm3/1000 strokes | : 4.0 |
| <hr/> | |
| Check tolerance | |
| cm3/1000S. | : 6.5 |
| <hr/> | |

| | |
|-------------------|----------|
| Rated speed rpm | : 500 |
| <hr/> | |
| Rack travel in mm | : 5.65 |
| Tolerance mm | : ± 0.10 |
| Del. quantity | |
| cm3/1000 strokes | : 20.5 |
| Tolerance | |
| cm3/1000 strokes | : ± 2.0 |
| Check tolerance | |
| cm3/1000S. | : ± 4.5 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 6.0 |
| Check tolerance | |
| cm3/1000S. | : 8.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| control lever | |
| position degree | : - 3 |
| Rated speed rpm | : 800 |
| <hr/> | |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : ± 0.20 |
| <hr/> | |
| governor spring | |
| pre-tension | |
| click setting x | : 3.25 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|---------|
| Rated speed rpm | : 1100 |
| Aneroid pressure | |
| hPa | : 1000 |
| Del. quantity | |
| cm3/1000 strokes | : 109.5 |

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : ± 1.0 |
| Check tolerance | |
| cm3/1000S. | : ± 3.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 4.0 |
| Check tolerance | |
| cm3/1000S. | : 6.5 |

CONTROL LEVER

| | |
|------------------|---------|
| control lever | |
| position degree | : 101.0 |
| tolerance degree | : ± 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 11.70 |
| Rated speed rpm | : 1165 |
| Tolerance 1/min | : ± 5 |

| | |
|-----------------|--------|
| rack travel mm | : 6.00 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : ± 5 |

| | |
|-----------------|----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : ± 0.55 |
| Rated speed rpm | : 1375 |

LOW IDLE

| | |
|------------------|---------|
| control lever | |
| position degree | : 81.0 |
| tolerance degree | : ± 4.0 |

Control lever difference

| | |
|------------------|---------|
| Grad | : 20.0 |
| tolerance degree | : ± 4.0 |

Setting point w/out bumper spring

| | |
|-----------------|----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 5.15 |
| Tolerance mm | : ± 0.10 |

| | |
|-----------------|-------|
| Rated speed rpm | : 100 |
|-----------------|-------|

| | |
|-------------|-----------|
| CRT mm min. | : > 19.00 |
|-------------|-----------|

Testing:

| | |
|-----------------|----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 5.65 |
| Tolerance mm | : ± 0.10 |

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 12.75
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 750

Pressure hPa : 650
rack travel mm : 13.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.65
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.97
Test oil : ISO 4113

Combination No. : 9 400 030 747

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1100A0C863R
Governor no. : 9 420 034 721

Cust. part No. : 3930152

Customer-spec. information
Customer : CDC
Motor : 48T3.9
Power KW : 71.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.75
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.75
Rated speed rpm : 1165
Tolerance 1/min : +- 5

rack travel mm : 6.00
Rated speed rpm : 1225
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1375

rack travel mm : 6.00
Rated speed rpm : 1225
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

Control lever difference
Grad : 12.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.25
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.75
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 10.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.75
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.12.96

Test oil : ISO 4113

Combination No. : F 002 A0Z 015

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV475...1250A0C892R

Governer no. : F 002 A20 215

Cust. part No. : 3928602

Customer-spec. information

Customer : CDC

Motor : 48TA ELITE

Power KW : 86.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 113.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 113.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 109.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1300

Tolerance 1/min. : ± 5

rack travel mm : 5.10

Rated speed rpm : 1385

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1450

rack travel mm : 5.10

Rated speed rpm : 1390

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 85.0

Control lever difference
Grad : 24.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475

rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1000

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 12.80
Tolerance mm : + 0.20

Pressure hPa : 500
rack travel mm : 12.00
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 6.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97

Test oil : ISO 4113

Combination No. : F 002 A0Z 026

Injection pump

Pump designation : PES4A95D320/3RS2820

EP type number : 9 410 037 214

Governor

Governor design. : RSV475...1250A0C904R

Governor no. : F 002 A20 220

Cust. part No. : 3930148

Customer-spec. information

Customer : CDC

Motor : 4BT3.9

Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 8.50

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35

Tolerance mm : ± 0.05

Del. quantity

: m3/1000 strokes : 85.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 20.5

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 85.0

K01

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1305
Tolerance 1/min : +- 10

rack travel mm : 6.30
Rated speed rpm : 1355
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1475

rack travel mm : 6.30
Rated speed rpm : 1355
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 90.0
tolerance degree : +- 4.0

Control lever difference
Grad : 22.0
tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 10.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 29.05.97
Test oil : ISO 4112

Combination No. : F 002 A0Z 039

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1100A0C919R
Governor no. : F 002 A20 229

Cust. part No. : 3932479

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 94.0

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 3.0 |
| Spread | |
| Tolerance | |
| cm3/1000 strokes | : 3.5 |
| Check tolerance | |
| cm3/1000S. | : 6.0 |

| | |
|-------------------|----------|
| Rated speed rpm | : 500 |
| Rack travel in mm | : 5.10 |
| Tolerance mm | : + 0.10 |
| Del. quantity | |
| cm3/1000 strokes | : 18.5 |
| Tolerance | |
| cm3/1000 strokes | : + 2.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.5 |
| Spread | |
| Tolerance | |
| cm3/1000 strokes | : 3.5 |
| Check tolerance | |
| cm3/1000S. | : 5.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| control lever | |
| position degree | : - 3 |
| Rated speed rpm | : 800 |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : + 0.20 |
| governor spring | |
| pre-tension | |
| click setting x | : 1.75 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|--------|
| Rated speed rpm | : 1100 |
| Aneroid pressure | |
| hPa | : 900 |

| | |
|------------------|---------|
| Del. quantity | |
| cm3/1000 strokes | : 94.0 |
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 3.0 |
| Spread | |
| Tolerance | |
| cm3/1000 strokes | : 3.5 |
| Check tolerance | |
| cm3/1000S. | : 6.0 |

CONTROL LEVER

| | |
|------------------|---------|
| control lever | |
| position degree | : 92.0 |
| tolerance degree | : + 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 10.20 |
| Rated speed rpm | : 1165 |
| Tolerance 1/min | : + 5 |

| | |
|-----------------|--------|
| rack travel mm | : 5.40 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : + 5 |

| | |
|-----------------|----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : + 0.55 |
| Rated speed rpm | : 1350 |

| | |
|-----------------|--------|
| rack travel mm | : 5.40 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : + 15 |

LOW IDLE

| | |
|------------------|---------|
| control lever | |
| position degree | : 75.0 |
| tolerance degree | : + 4.0 |

Control lever difference

| | |
|------------------|---------|
| Grad | : 17.0 |
| tolerance degree | : + 6.0 |

Setting point w/out bumper spring

| | |
|-----------------|----------|
| Rated speed rpm | : 500 |
| rack travel mm | : 4.60 |
| Tolerance mm | : + 0.10 |

| | |
|-----------------|-------|
| Rated speed rpm | : 100 |
|-----------------|-------|

| | |
|-------------|-----------|
| CRT mm min. | : > 19.00 |
|-------------|-----------|

Testing:

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800
Pressure hPa : 650
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 107.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113
Combination No. : F 002 A0Z 042
Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215
Governor
Governor design. : RSV500...1100A0C924R
Governor no. : F 002 A20 232

Cust. part No. : 3932477

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 500

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.5

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 78.5

K07

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.80
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 5.40
Rated speed rpm : 1235
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 5.40
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 15.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 90.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.05.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 043

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1100A0C925R
Governor no. : F 002 A20 233

Cust. part No. : 3932478

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

| | | |
|--|-----|------|
| Del. quantity cm ³ /1000 strokes | : | 86.0 |
| Tolerance cm ³ /1000 strokes | : ± | 1.0 |
| Check tolerance cm ³ /1000S. | : ± | 3.0 |
| Speed | | |
| Tolerance cm ³ /1000 strokes | : | 3.5 |
| Check tolerance cm ³ /1000S. | : | 6.0 |

| | | |
|--|-----|------|
| Rated speed rpm | : | 500 |
| Rack travel in mm | : | 5.40 |
| Tolerance mm | : ± | 0.10 |
| Del. quantity cm ³ /1000 strokes | : | 18.5 |
| Tolerance cm ³ /1000 strokes | : ± | 2.0 |
| Check tolerance cm ³ /1000S. | : ± | 4.5 |
| Speed | | |
| Tolerance cm ³ /1000 strokes | : | 3.5 |
| Check tolerance cm ³ /1000S. | : | 5.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | | |
|---|-----|------|
| control lever position degree | : | - 3 |
| Rated speed rpm | : | 800 |
| Rack travel in mm | : | 0.50 |
| Tolerance mm | : ± | 0.20 |
| governor spring pre-tension click setting x | : | 3.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | | |
|-----------------|---|------|
| Rated speed rpm | : | 1100 |
|-----------------|---|------|

| | | |
|--|-----|------|
| Aneroid pressure hPa | : | 900 |
| Del. quantity cm ³ /1000 strokes | : | 86.0 |
| Tolerance cm ³ /1000 strokes | : ± | 1.0 |
| Check tolerance cm ³ /1000S. | : ± | 3.0 |
| Speed | | |
| Tolerance cm ³ /1000 strokes | : | 3.5 |
| Check tolerance cm ³ /1000S. | : | 6.0 |

CONTROL LEVER

| | | |
|----------------------------------|-----|------|
| control lever position degree | : | 94.0 |
| tolerance degree | : ± | 4.0 |

| | | |
|-----------------|-----|------|
| RATED SPEED | | |
| rack travel mm | : | 9.80 |
| Rated speed rpm | : | 1165 |
| Tolerance 1/min | : ± | 5 |

| | | |
|-----------------|-----|------|
| rack travel mm | : | 6.00 |
| Rated speed rpm | : | 1225 |
| Tolerance 1/min | : ± | 5 |

| | | |
|-----------------|-----|------|
| rack travel mm | : | 0.85 |
| Tolerance mm | : ± | 0.55 |
| Rated speed rpm | : | 1300 |

| | | |
|-----------------|-----|------|
| rack travel mm | : | 6.00 |
| Rated speed rpm | : | 1230 |
| Tolerance 1/min | : ± | 15 |

LOW IDLE

| | | |
|----------------------------------|-----|------|
| control lever position degree | : | 80.0 |
| tolerance degree | : ± | 4.0 |

| | | |
|----------------------------------|-----|------|
| Control lever difference Grad | : | 14.0 |
| tolerance degree | : ± | 6.0 |

Setting point w/out bumper spring

| | | |
|-----------------|-----|------|
| Rated speed rpm | : | 500 |
| rack travel mm | : | 4.90 |
| Tolerance mm | : ± | 0.10 |

| | | |
|-----------------|---|-----|
| Rated speed rpm | : | 100 |
|-----------------|---|-----|

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.40
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : -

MEASUREMENT

Pressure hPa : 800
rack travel mm : 11.05
Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5

Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.05.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 061

Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017

Governor
Governor design. : RSV475...1100A2C941R
Governor no. : F 002 A20 242

Cust. part No. : 3930143

Customer-spec. information
Customer : CDC
Motor : 4BNA3.9
Power KW : 54.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.75
Tolerance mm : ± 0.05

| | | |
|-----------------------------------|---|-------|
| Del. quantity cm3/1000 strokes | : | 84.5 |
| <hr/> | | |
| Tolerance cm3/1000 strokes | : | ± 1.0 |
| <hr/> | | |
| Check tolerance cm3/1000S. | : | ± 3.0 |
| <hr/> | | |
| Spreed | | |
| <hr/> | | |
| Tolerance cm3/1000 strokes | : | 3.5 |
| <hr/> | | |
| Check tolerance cm3/1000S. | : | 6.0 |
| <hr/> | | |

| | | |
|-----------------------------------|---|--------|
| Rated speed rpm | : | 475 |
| | | |
| Rack travel in mm | : | 4.60 |
| Tolerance mm | : | ± 0.10 |
| Del. quantity cm3/1000 strokes | : | 13.5 |
| Tolerance cm3/1000 strokes | : | ± 2.0 |
| Check tolerance cm3/1000S. | : | ± 4.5 |
| Spreed | | |
| Tolerance cm3/1000 strokes | : | 3.5 |
| Check tolerance cm3/1000S. | : | 5.5 |

(9) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

| | | |
|---|---|--------|
| control lever position degree | : | - 3 |
| Rated speed rpm | : | 800 |
| | | |
| Rack travel in mm | : | 0.50 |
| Tolerance mm | : | ± 0.20 |
| | | |
| governor spring pre-tension click setting x | : | 3.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | | |
|-----------------|---|------|
| Rated speed rpm | : | 1100 |
|-----------------|---|------|

| | | |
|-----------------------------------|---|-------|
| Aneroid pressure hPa | : | - |
| Del. quantity cm3/1000 strokes | : | 84.5 |
| Tolerance cm3/1000 strokes | : | ± 1.0 |
| Check tolerance cm3/1000S. | : | ± 3.0 |
| Spreed | | |
| Tolerance cm3/1000 strokes | : | 3.5 |
| Check tolerance cm3/1000S. | : | 6.0 |

CONTROL LEVER

| | | |
|----------------------------------|---|-------|
| control lever position degree | : | 97.0 |
| tolerance degree | : | ± 4.0 |

RATED SPEED

| | | |
|-----------------|---|------|
| rack travel mm | : | 8.70 |
| Rated speed rpm | : | 1155 |
| Tolerance 1/min | : | ± 5 |

| | | |
|-----------------|---|------|
| rack travel mm | : | 4.00 |
| Rated speed rpm | : | 1210 |
| Tolerance 1/min | : | ± 5 |

| | | |
|-----------------|---|--------|
| rack travel mm | : | 0.85 |
| Tolerance mm | : | ± 0.55 |
| Rated speed rpm | : | 1300 |

| | | |
|-----------------|---|------|
| rack travel mm | : | 4.00 |
| Rated speed rpm | : | 1220 |
| Tolerance 1/min | : | ± 15 |

LOW IDLE

| | | |
|----------------------------------|---|-------|
| control lever position degree | : | 78.0 |
| tolerance degree | : | ± 4.0 |

Control lever difference

| | | |
|------------------|---|-------|
| Grad | : | 19.0 |
| tolerance degree | : | ± 6.0 |

Setting point w/out bumper spring

| | | |
|-----------------|---|--------|
| Rated speed rpm | : | 475 |
| rack travel mm | : | 4.10 |
| Tolerance mm | : | ± 0.10 |

| | | |
|-----------------|---|-----|
| Rated speed rpm | : | 100 |
|-----------------|---|-----|

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Rated speed rpm : 600

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.05.95
Test oil : ISO 4113

Combination No. : 0 401 846 826

Injection pump
Pump designation : PE6P120A320RS3178
EP type number : 0 411 826 752

Governor
Governor design. : RQV250...1025PA921
: -2
Governor no. : 0 421 813 785

Cust. part No. : 470930-P06 V. 06/92

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD122FS
Power KW : 287.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

K15

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity
cm3/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 4.95

Tolerance mm : +- 0.15

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : +- 2.5

Check tolerance
cm³/1000S. : +- 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 259.0
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : +- 4.0

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 13.05
Rated speed rpm : 1060
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 63.0
tolerance degree : +- 4.0

control lever
position degree : 10.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.40

Testing:

Rated speed rpm : 250
rack travel mm : 4.95
Tolerance mm : +- 0.15

Rated speed rpm : 325

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 780
rack travel mm : 3.30
Tolerance mm : \pm 0.20

Pressure hPa : 105
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 4.95
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113
Combination No. : 0 402 076 801A
Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793
Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1388638

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.60

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.60

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.60

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.60

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.60

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.60

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 076 801B

Injection pump
Pump designation : PES6P120A1320/SRS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1388640

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000s. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.50

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.50

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.50

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.50

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.50

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.50

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.55
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.7
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 076 801c

Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1397107

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.80

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.80

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.80

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.80

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.80

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113
Combination No. : 0 402 076 802A
Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794
Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1388635

Customer-spec. information
Customer : SCANIA
Motor : DS1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1210

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 410
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 670
rack travel mm : 13.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97

Test oil : ISO 4113

Combination No. : 0 402 076 802B

Injection pump

Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV35G...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1388636

Customer-spec. information

Customer : SCANIA

Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure
bar

: 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : \pm 4.0

control lever
position degree : 99.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.20
Rated speed rpm : 945

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1045

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1065

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : \pm 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113
Combination No. : 0 402 076 802C
Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794
Governor
Governor design. : RSV350...1050P84643
Governor no. : 0 421 833 555

Cust. part No. : 1388637

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1195

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : \pm 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97

Test oil : ISO 4113

Combination No. : 0 402 076 802D

Injection pump

Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1359594

Customer-spec. information

Customer : SCANIA

Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 104

Opening pressure bar

: 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1095

Tolerance 1/min : \pm 5
Check

speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1185

Tolerance 1/min : \pm 15
Check

speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1205

Tolerance 1/min : \pm 15
Check

speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 4.0

control lever
position degree : 23.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : +- 0.05

Rated speed rpm : 1050
rack travel mm : 14.15
Tolerance mm : +- 0.05

Rated speed rpm : 925
rack travel mm : 14.60
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.15
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : +- 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 189.0
Tolerance
cm3/1000 strokes : +- 4.0
Check tolerance
cm3/1000S. : +- 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Speed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113
Combination No. : 0 402 076 811A
Injection pump
Pump designation : PES6P120A1320/5RS338
: 0
EP type number :
Governor
Governor design. : RSV350...11U0P8A664
Governor no. :

Cust. part No. : 1393866

Customer-spec. information
Customer : SCANIA
Motor : DS9 93M,DSC9 47A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1145

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1230

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1250

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 24.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 540
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113
Combination No. : 0 402 076 811B
Injection pump
Pump designation : PES6P120A1320/5RS338
: 0
EP type number : 0 412 026 800
Governor
Governor design. : RSV350...1100P8A664
Governor no. : 0 421 833 584

Cust. part No. : 1403477 (Version B)

Customer-spec. information
Customer : SCANIA
Motor : DS9 93M,DSC9 47A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1145

Tolerance 1/min : \pm 5
Check

speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1245

Tolerance 1/min : \pm 15
Check

speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 27.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 11.15
Tolerance mm : \pm 0.15

Pressure hPa : 310
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 076 812A

Injection pump
Pump designation : PES6P120A1320/5RS338
: 1
EP type number : 0 412 026 801

Governor
Governor design. : RSV350...1100P1A666
Governor no. : 0 421 833 585

Cust. part No. : 1393869

Customer-spec. information
Customer : SCANIA
Motor : DS9 92A/95M

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 217.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 217.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 15.30

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 15.30

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 15.30

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.30

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.30

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.30

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 340
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 740
rack travel mm : 15.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97

Test oil : ISO 4113

Combination No. : 0 402 648 603A

Injection pump

Pump designation : PE8P120A720LS7427T

EP type number : 0 412 628 919

Governor

Governor design. : RQ750PA1227-1

Governor no. : 0 421 801 812

Cust. part No. : 1391888

Customer-spec. information

Customer : SCANIA

Motor : DSI(C)14...A,M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration

damper

(RoBo diaphragm) : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1-2A- 7- 3A- 4

: - 5A- 6

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 15.05

Tolerance mm : ± 0.05

| | |
|--|----------|
| Del. quantity cm ³ /1000 strokes | : 271.0 |
| Tolerance cm ³ /1000 strokes | : +- 1.0 |
| Check tolerance cm ³ /1000S. | : +- 8.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

| | |
|--|-----------|
| Rack travel in mm | : 6.50 |
| Tolerance mm | : +- 0.10 |
| Del. quantity cm ³ /1000 strokes | : 38.0 |
| Tolerance cm ³ /1000 strokes | : +- 4.0 |
| Check tolerance cm ³ /1000S. | : +- 6.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 5.0 |
| Check tolerance cm ³ /1000S. | : 9.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|---------------------------|-----------|
| Rated speed rpm | : 759 |
| guide sleeve travel mm | : 4.89 |
| Tolerance mm | : +- 0.15 |
| Rated speed rpm | : 480 |
| Tolerance mm | : +- 0.25 |
| Rated speed rpm | : 840 |
| Tolerance mm | : +- 0.25 |
| Rated speed rpm | : 797 |
| guide sleeve travel mm | : 10.00 |
| Tolerance mm | : +- 0.25 |
| Rated speed rpm | : 850 |

| | |
|---------------------------|-----------|
| guide sleeve travel mm | : 11.50 |
| Tolerance mm | : +- 0.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--|----------|
| Rated speed rpm | : 850 |
| Aneroid pressure hPa | : 1500 |
| Del. quantity cm ³ /1000 strokes | : 271.0 |
| Tolerance cm ³ /1000 strokes | : +- 1.0 |
| Check tolerance cm ³ /1000S. | : +- 8.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

CONTROL LEVER

| | |
|----------------------------------|----------|
| control lever position degree | : 30.0 |
| tolerance degree | : +- 4.0 |
| control lever position degree | : 92.0 |
| tolerance degree | : +- 4.0 |

ASSEMBLY GOVERNOR SETTING

| | |
|-----------------|-----------|
| Rated speed rpm | : 900 |
| rack travel mm | : 15.50 |
| Rated speed rpm | : 940 |
| Tolerance 1/min | : +- 4 |
| rack travel mm | : 4.00 |
| rack travel mm | : 0.50 |
| Tolerance mm | : +- 0.50 |
| Rated speed rpm | : 1000 |
| Rated speed rpm | : 901 |
| rack travel mm | : 15.50 |
| Rated speed rpm | : 941 |
| Tolerance 1/min | : +- 4 |
| rack travel mm | : 4.00 |
| rack travel mm | : 0.50 |
| Tolerance mm | : +- 0.50 |
| Rated speed rpm | : 1000 |

Rated speed rpm : 902
rack travel mm : 15.50

Rated speed rpm : 942
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 15.50

Rated speed rpm : 943
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 15.50

Rated speed rpm : 944
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 15.50

Rated speed rpm : 945
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 15.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : --
rack travel mm : 12.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 590
rack travel mm : 14.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 678 832B

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893

Governor
Governor design. : RSV350...1050P8A652
Governor no. : 0 421 833 569

Cust. part No. : 1391881

Customer-spec. information
Customer : SCANIA
Motor : DS(C,I)14...A

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 256.0

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 7.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

| | |
|-------------------|----------|
| Rated speed rpm | : 350 |
| Rack travel in mm | : 4.60 |
| Tolerance mm | : + 0.10 |
| Del. quantity | |
| cm3/1000 strokes | : 21.0 |
| Tolerance | |
| cm3/1000 strokes | : + 3.0 |
| Check tolerance | |
| cm3/1000S. | : + 6.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 4.0 |
| Check tolerance | |
| cm3/1000S. | : 8.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| control lever | |
| position degree | : - 3 |
| Rated speed rpm | : 800 |
| Rack travel in mm | : 0.50 |
| Tolerance mm | : + 0.20 |
| governor spring | |
| pre-tension | |
| click setting x | : 6.00 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|---------|
| Rated speed rpm | : 700 |
| Aneroid pressure | |
| hPa | : 1500 |
| Del. quantity | |
| cm3/1000 strokes | : 256.0 |

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 7.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

CONTROL LEVER

| | |
|------------------|---------|
| control lever | |
| position degree | : 57.0 |
| tolerance degree | : + 4.0 |

| | |
|------------------|---------|
| control lever | |
| position degree | : 107.0 |
| tolerance degree | : + 4.0 |

RATED SPEED

| | |
|-----------------|---------|
| rack travel mm | : 12.90 |
| Rated speed rpm | : 1095 |
| Tolerance 1/min | : + 5 |
| Check | |
| speed 1/min | : + 10 |

| | |
|-----------------|--------|
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1205 |
| Tolerance 1/min | : + 15 |
| Check | |
| speed 1/min | : + 20 |

| | |
|-----------------|----------|
| rack travel mm | : 0.85 |
| Tolerance mm | : + 0.55 |
| Rated speed rpm | : 1305 |

LOW IDLE

| | |
|------------------|---------|
| control lever | |
| position degree | : 76.0 |
| tolerance degree | : + 4.0 |

| | |
|------------------|---------|
| control lever | |
| position degree | : 26.0 |
| tolerance degree | : + 4.0 |

Setting point w/out bumper spring

| | |
|-----------------|----------|
| Rated speed rpm | : 350 |
| rack travel mm | : 4.10 |
| Tolerance mm | : + 0.10 |

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 678 832C

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893

Governor
Governor design. : RSV350...1050P8A652
Governor no. : 0 421 833 569

Cust. part No. : 1391883

Customer-spec. information
Customer : SCANIA
Motor : DS(C,I)14...A

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 271.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 8.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.60

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 21.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 271.0

L28

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 8.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : +- 4.0

control lever
position degree : 107.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.40

Rated speed rpm : 1095

Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00

Rated speed rpm : 1210

Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1360

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

control lever
position degree : 26.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 249.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.09.97

Test oil : ISO 4113

Combination No. : 0 402 746 635

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governor design. : RQV275...1100PA1356K

Governor no. : 0 421 815 557

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor : 8460.41T.2036

Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Check

tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.40

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155
guide sleeve
travel mm : 9.76
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.70
Tolerance mm : \pm 0.20

Rated speed rpm : 791
guide sleeve
travel mm : 6.42
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.77

M03

Tolerance mm : \pm 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 1145

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1220

Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 275
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.40
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.15

Rated speed rpm : 600
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 12.50
Tolerance mm : \pm 0.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 280
rack travel mm : 10.10
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 11.20
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 180
Rated speed rpm : < 220

Check
speed 1/min : > 160
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 12.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spræed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.09.97
Test oil : ISO 4113

Combination No. : 0 402 796 034

Injection pump
Pump designation : PES6H120/320RS8
EP type number : 0 412 726 005

Governor
Governor design. : RE36
Governor no. : 0 421 890 355

Cust. part No. : 51.11103-7333

Customer-spec. information

Customer : MAN
Motor : D 0826 LUH 12
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 8.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 800
Uact V : 2.510
Prestroke solenoid
Stroke mm : 13.20
Del. quantity
cm3/1000 strokes : 222.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 8.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1200
Uact V : 2.540
Prestroke solenoid
Stroke mm : 10.30
Del. quantity
cm3/1000 strokes : 209.0
Tolerance
cm3/1000 strokes : +/- 5.0
Check tolerance
cm3/1000S. : +/- 9.0

Rated speed rpm : 800
Uact V : 1.400
Prestroke solenoid
Stroke mm : 12.00
Del. quantity
cm3/1000 strokes : 58.0
Tolerance
cm3/1000 strokes : +/- 4.0

Check tolerance
cm³/1000S. : +- 8.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 500
Uact V : 1.930
Prestroke solenoid
Stroke mm : 10.40
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 8.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.440
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.060
Prestroke solenoid
Stroke mm : 8.80
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.100
Prestroke solenoid
Stroke mm : 7.20
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : +- 6.0
Check tolerance
cm³/1000S. : +- 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition. : 08.07.97
Test oil : ISO 4113
Combination No. : 0 402 946 015
Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025
Governor
Governor design. : RQV250...1000PA1239
Governor no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information
Customer : SCANIA
Motor : DSC 913

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 11.35

M11

Tolerance mm : \pm 0.15

Pressure hPa : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190
Rated speed rpm : $>$ 150

Check
speed 1/min : $<$ 210
Check
speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.60

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97

Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -

Governer no. : 0 421 814 158

Cust. part No. : 1369528

Customer-spec. information

Customer : SCANIA

Motor : DSC 912

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 292.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : + 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : + 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : + 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : + 4.0

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1045
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.70

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 11.30

M15

Tolerance mm : \pm 0.15

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 150
Rated speed rpm : $<$ 190

Check
speed 1/min : $>$ 130
Check
speed 1/min : $<$ 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97
Test oil : ISO 4113
Combination No. : 0 402 946 020
Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025
Governor
Governor design. : RQV250...1000PA1239
: -2
Governor no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

control lever
position degree : 24.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 11.20

M19

Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190
Rated speed rpm : $>$ 150

Check
speed 1/min : $<$ 210
Check
speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 278.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97

Test oil : ISO 4113

Combination No. : 0 402 946 021

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governor design. : RQ250/1000PA1265

Governor no. : 0 421 801 800

Cust. part No. : 1380278

Customer-spec. information

Customer : SCANIA

Motor : DSC 9.12

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 292.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1073
guide sleeve
travel mm : 4.82
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 990
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 364
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1146
guide sleeve
travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1610
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 16.40
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 107.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1045

Tolerance 1/min : + 5

Check

speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1235

Tolerance 1/min : + 15

Check

speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 87.0

tolerance degree : + 4.0

control lever

position degree : 25.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.60

Tolerance mm : + 0.10

Rated speed rpm : 355

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.70

Tolerance mm : + 0.05

Rated speed rpm : 1000

rack travel mm : 12.70

Tolerance mm : + 0.10

ANEROID/ALTITUDE

COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.70

Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 10.80

Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250

rack travel mm : 11.30

Tolerance mm : + 0.15

Pressure hPa : 620

rack travel mm : 12.30

Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 150

Rated speed rpm : < 190

Check

speed 1/min : > 130

Check

speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 288.0

Tolerance

cm³/1000 strokes : + 4.0

Check tolerance

cm³/1000s. : + 9.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97

Test oil : ISO 4113

Combination No. : 0 402 946 022

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQ250/1000PA1265-1

Governer no. : 0 421 801 801

Cust. part No. : 1380280

Customer-spec. information

Customer : SCANIA

Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1073
guide sleeve
travel mm : 4.82
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 990
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 364
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1146
guide sleeve
travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1610
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 16.40
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 38.0
tolerance degree : \pm 4.0

control lever
position degree : 106.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1045

Tolerance 1/min : \pm 5

Check

speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 87.0

tolerance degree : \pm 4.0

control lever

position degree : 25.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.70

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.30

Tolerance mm : \pm 0.05

Rated speed rpm : 1000

rack travel mm : 12.30

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.30

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 10.80

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330

rack travel mm : 11.20

Tolerance mm : \pm 0.15

Pressure hPa : 600

rack travel mm : 11.90

Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190

Rated speed rpm : $>$ 150

Check

speed 1/min : $<$ 210

Check

speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 278.0

Tolerance

cm³/1000 strokes : \pm 4.0

Check tolerance

cm³/1000s. : \pm 8.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97
Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump
Pump designation : PES6P120A320RS3038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265-2
Governor no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.15

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1060
guide sleeve
travel mm : 4.82
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.20

Rated speed rpm : 970
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

N02

Rated speed rpm : 360
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1134
guide sleeve
travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1600
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 16.40
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 108.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1045

Tolerance 1/min : \pm 5

Check

speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1240

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 37.0

tolerance degree : \pm 4.0

control lever

position degree : 25.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.50

Testing:

Rated speed rpm : 250

rack travel mm : 7.60

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600

rack travel mm : 12.90

Tolerance mm : \pm 0.05

Rated speed rpm : 1000

rack travel mm : 12.90

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.90

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 9.80

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 430

rack travel mm : 10.90

Tolerance mm : \pm 0.15

Pressure hPa : 830

rack travel mm : 12.00

Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190

Rated speed rpm : $>$ 150

Check

speed 1/min : $<$ 210

Check

speed 1/min : $>$ 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 1000

Del. quantity

cm³/1000 strokes : 295.0

Tolerance

cm³/1000 strokes : \pm 4.0

Check tolerance

cm³/1000S. : \pm 9.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97

Test oil : ISO 4113

Combination No. : 0 402 946 024A

Injection pump

Pump designation : PES6P12GA72CRS8045

EP type number : 0 412 926 028

Governor

Governor design. : RQ750PA1299

Governor no. : 0 421 801 810

Cust. part No. : 1388643

Customer spec. information

Customer : SCANIA

Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 90

Tolerance l/h : ± 20.0

Test nozzle holder

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 338.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 10.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 3.30
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 907
guide sleeve
travel mm : 5.23
Tolerance mm : ± 0.15

Rated speed rpm : 590
guide sleeve
travel mm : -9.42
Tolerance mm : ± 0.25

Rated speed rpm : 1010
guide sleeve
travel mm : 18.06

Tolerance mm : ± 0.25

Rated speed rpm : 953
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1010
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 338.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 10.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 29.0
tolerance degree : ± 4.0

control lever
position degree : 90.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 12.70

Rated speed rpm : 936
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

Rated speed rpm : 901
rack travel mm : 12.70

Rated speed rpm : 937
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 902
rack travel mm : 12.70

Rated speed rpm : 938
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 12.70

Rated speed rpm : 939
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 12.70

Rated speed rpm : 940
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 12.70

Rated speed rpm : 941
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

TORQUE CONTROL

Rated speed rpm : 850

N07

rack travel mm : 13.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : 9.80
Tolerance mm : \pm 0.25

Pressure hPa : 820
rack travel mm : 12.40
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97

Test oil : ISO 4113

Combination No. : 0 402 946 025

Injection pump

Pump designation : PES6P12GA320RS8033

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239
: -3

Governer no. : 0 421 814 178

Cust. part No. : 1383494

Customer-spec. information

Customer : SCANIA

Motor : DSC 915

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 100

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve

travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve

travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve

travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1045

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1235

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 325
rack travel mm : 10.55

N10

Tolerance mm : \pm 0.15

Pressure hPa : 760
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $<$ 190
Rated speed rpm : $>$ 170

Check
speed 1/min : $<$ 210
Check
speed 1/min : $>$ 150

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.97
Test oil : ISO 4113

Combination No. : 0 402 946 026A

Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQV350...1100PA1305K
Governor no. : 0 421 815 967

Cust. part No. : 1388633

Customer-spec. information
Customer : SCANIA
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 302.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1166
guide sleeve
travel mm : 10.16
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.20

Rated speed rpm : 755
guide sleeve
travel mm : 6.14
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 4.07
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1237

Rack travel in mm : 12.75
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 302.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10
rack travel mm : 4.00

Rated speed rpm : 1247
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 20.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : + 0.30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.10

Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.35
Tolerance mm : + 0.25

Pressure hPa : 800
rack travel mm : 10.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.09.97

Test oil : ISO 4113

Combination No. : 0 403 466 175

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governor design. : RSV400...950MW2A395

Governor no. : 0 420 085 283

Cust. part No. : 3930113

Customer-spec. information

Customer : CDC

Motor : 6 CT-830

Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 101

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 3.35

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.15

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80

Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 20.7

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.15
Rated speed rpm : 990
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1040
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1055
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 68.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.30
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.80
Tolerance mm : +- 0.30

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.15
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.15
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.2
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.1
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Check hydraulic start locking and
unlocking device with 500...1000 hPa.

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 20.7
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.09.97
Test oil : ISO 4113
Combination No. : 0 403 474 021E
Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0 413 404 107
Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0 420 085 183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D924TI-E A2
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 049
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 13.40
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 184.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 4.0

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : \pm 0.20

Del. quantity
cm3/1000 strokes : 23.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1250

Del. quantity
cm3/1000 strokes : 184.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.40

Rated speed rpm : 1025
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1075

Tolerance 1/min : \pm 10

rack travel mm : 1.00
Tolerance mm : \pm 0.70

Rated speed rpm : 1175

rack travel mm : 4.00
Rated speed rpm : 1085

Tolerance 1/min : \pm 10

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.00

Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.40

| | | |
|-----------------|---|--------|
| Tolerance mm | : | ± 0.05 |
| Rated speed rpm | : | 500 |
| rack travel mm | : | 13.40 |
| Tolerance mm | : | ± 0.05 |
| | | |
| Rated speed rpm | : | 700 |
| rack travel mm | : | 13.40 |
| Tolerance mm | : | ± 0.05 |

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

| | | |
|-----------------|---|--------|
| Rated speed rpm | : | 550 |
| Pressure hPa | : | - |
| rack travel mm | : | 11.60 |
| Tolerance mm | : | ± 0.05 |
| | | |
| Rated speed rpm | : | 550 |
| Pressure hPa | : | 1230 |
| rack travel mm | : | 13.40 |
| Tolerance mm | : | ± 0.05 |

MEASUREMENT

| | | |
|-----------------|---|--------|
| Rated speed rpm | : | 550 |
| | | |
| Pressure hPa | : | 540 |
| rack travel mm | : | 12.10 |
| Tolerance mm | : | ± 0.05 |
| | | |
| Pressure hPa | : | 650 |
| rack travel mm | : | 13.00 |
| Tolerance mm | : | ± 0.10 |

FUEL DELIVERY CHARACTERISTICS

| | |
|-------------------------------|---------|
| Aneroid pressure | |
| hPa | : 1250 |
| Rated speed rpm | : 500 |
| Del. quantity | |
| cm ³ /1000 strokes | : 184.0 |
| Tolerance | |
| cm ³ /1000 strokes | : ± 2.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 5.0 |
| Speed | |
| Tolerance | |
| cm ³ /1000 strokes | : 6.0 |
| Check tolerance | |
| cm ³ /1000S. | : 9.0 |

| | |
|-------------------------------|---------|
| Aneroid pressure | |
| hPa | : 1250 |
| Rated speed rpm | : 700 |
| Del. quantity | |
| cm ³ /1000 strokes | : 190.0 |
| Tolerance | |
| cm ³ /1000 strokes | : ± 2.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 5.0 |

| | |
|-------------------------------|---------|
| Aneroid pressure | |
| hPa | : - |
| Rated speed rpm | : 550 |
| Del. quantity | |
| cm ³ /1000 strokes | : 149.0 |
| Tolerance | |
| cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 4.0 |

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

| | | |
|-------------------------------|---------|--------|
| Rated speed rpm | : | 100 |
| rack travel mm | : | 20.00 |
| Tolerance mm | : | ± 1.00 |
| Del. quantity | | |
| cm ³ /1000 strokes | : 135.0 | |
| Tolerance | | |
| cm ³ /1000 strokes | : ± 5.0 | |
| Check tolerance | | |
| cm ³ /1000S. | : ± 8.0 | |

LOW IDLE

| | | |
|-------------------------------|---------|--------|
| Rated speed rpm | : | 400 |
| | | |
| Rack travel in mm | : | 5.00 |
| Tolerance mm | : | ± 0.20 |
| Del. quantity | | |
| cm ³ /1000 strokes | : 23.0 | |
| Tolerance | | |
| cm ³ /1000 strokes | : ± 2.0 | |
| Check tolerance | | |
| cm ³ /1000S. | : ± 4.5 | |
| Speed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : 3.5 | |

Check tolerance
cm³/1000s. : 5.0

End of test specification sheet

Note remarks

Edition : 02.05.90
Test oil : ISO-4113

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA848
: -2K
Governor no. : 0 421 815 170

```
Customer-spec. information
Customer      : MACK TRUCKS
Motor        : E6 275 4VH
Power KW      : 202.0
```

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Inlet press. bar : 1.50

Overflow quantity
min. L/h : 165.0
Tolerance L/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

N23

x inside diameter : 2.00
x length mm : 600

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 18.0
Tolerance bar : ± 1.0

```

Prestroke mm      : 2.80
Tolerance mm      : + 0.05
Check
tolerance mm      : + 0.10

```

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance °NW : + 0.75

```

Barrel no. : 1

Rated speed rpm : 850

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 182.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : \pm 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : \pm 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 182.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 905.0
Tolerance 1/min : \pm 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : \pm 15.0

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.20
Tolerance mm : ± 6.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 12.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 9.70
Tolerance mm : ± 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 360
rack travel mm : 11.70
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 213.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 31.12.96

Test oil : ISO 4113

Combination No. : 0 403 466 154

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governor design. : RSV500...1100MW2A370

Governor no. : 0 420 085 253

Cust. part No. : 3926880

Customer-spec. information

Customer : CDC

Motor : 6 CT

Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.80

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00

Difference ° CS : 2.00

Rated speed rpm : 500
rack travel mm : 4.75
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.25
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 850
rack travel mm : 11.90
Tolerance mm : \pm 0.20
Pressure hPa : 590
rack travel mm : 10.90
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.25
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet